

**Sustainable Food Systems in northern Ghana: Assessing the  
influence of International Development**

by

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## **ABSTRACT**

The concept of sustainable food systems gained prominence in the food security discourse as evidence from the 2007-2008 and 2010 world food and financial crisis suggested that food systems were under stress. The concept calls for a move from the production centered notion of food security towards a more socially and ecologically sensitive notion which is interested in addressing a complex array of problems that have rendered the food system ineffective. Given the continued prevalence of poverty and food insecurity in northern Ghana, this study assesses the attempts of international development agencies to improve food security in the region using the notion of sustainable food systems as the assessment criteria. Through triangulation, the study uses a combination of qualitative interview data and documentary analysis to answer the research questions. Various discourses of sustainability and concepts are used to deepen the understanding of the concept, leading to the identification of eight practical goals towards achieving sustainable food systems. Using the practical goals of achieving sustainable food systems as the assessment criteria, the study reveals that the food system in northern Ghana is unsustainable due to three categories of impediments (natural, cultural and economic, and institutional). The assessment of the World Food Programme development assistance in northern Ghana shows that international development operations remain ineffective in addressing the impediments to achieving sustainable food systems in the region. WFP's interventions failed to achieve its potential due to institutional inefficiencies of the agency and its partners. The study contributes to development policy and practice in northern Ghana by establishing the need for development partners to improve institutional efficiency and coordination, empower marginalized groups to access their rights, and prioritize agricultural irrigation in the region.

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## **ACRONYMS & ABBREVIATIONS**

AAA	Accra Agenda for Action
ACDI	Agricultural Cooperative Development International
ADRA	Adventist Development & Relief Agency
ADVANCE	Agriculture Development and Value Chain Enhancement project
AusAID	Australian Agency for International Development
BMI	Body Mass Index
CEPA	Center for Policy Analysis
CFSVA	Comprehensive Food Security Vulnerability Analysis
CGIAR	Consultative Group on International Agricultural Research
CPIC	Community Project Implementation Committees
CRI	Crop Research Institute
DACF	District Assemblies Common Fund
DANIDA	Danish International Development Agency
DEVs	Development Operations
EFSMA	Emergency Food Security and Market Assessment in Ghana
EMOPs	Emergency Operations
EPA	Environmental Protection Agency
FAO	Food and Agriculture Organization
FBOs	Farming Based Organizations
GGC	Ghana Grains Council
GHS	Ghana Health Service
GLSS	Ghana Living Standards Survey
GNA	Ghana News Agency
GSFP	Ghana School Feeding Programme
GSS	Ghana Statistical Service



IFAD	International Fund for Agricultural Development
IGA	Income Generating Activities
JICA	Japan International Cooperation Agency
MAM	Moderate Acute Malnutrition
MMDAs	Metropolitan, Municipal and District Assemblies
MoFA	Ministry of Food and Agriculture
MoH	Ministry of Health
MUAC	Mid-Upper Arm Circumference
NAFCO	National Buffer Stock Food Company
NGO	Non-Government Organizations
NRC	National Redemption Council
ODI	Overseas Development Institute
P4P	Purchase for Progress
PLHIV	People Living with HIV
PRROs	Protracted relief and recovery operations
SADA	Savannah Accelerated Development Authority
SAM	Severe Acute Malnutrition
SAP	Structural Adjustment Programme
SOs	Special Operations
SPEGE	Support for Primary Education and Girls' Education
THR	Take Home Rations
UNICEF	The United Nations Children's Fund
USAID	United States Agency for International Development
VOCA	Volunteers in Overseas Cooperative Assistance
WCED	World Commission on Environment and Development
WFP	World Food Programme

# **CHAPTER ONE: ACHIEVING FOOD SECURITY**

## **1.1 INTRODUCTION**

This thesis aims to assess the efforts made by international development agencies to improve food security in northern Ghana, using the notion of “sustainable food systems”. This is an emerging perspective argued to be more socially and ecologically sensitive than the conventional notion of “food security” as the assessment criterion.

In order to justify and explain this focus, this chapter will briefly outline the evolution of the food security concept, its relation to the notion of “food systems”, and the importance of examining food security from a sustainable food systems perspective. Having introduced the key concepts of food security and sustainable food systems, the role international development has played in attempting to achieve food security among populations of the Global South is summarized. International development agencies have identified food security as part of their key priorities, but have achieved only limited success, leading political ecologists and critical development scholars to conclude that development interventions may be doing more to hinder than help the achievement of sustainable food systems. The third main section of the chapter narrows the focus to food security and food systems in Ghana. In this section, I show that the three northern regions of Ghana are the most impoverished and the most food insecure. Ironically, households that earn their livelihood from farming are the most likely to suffer food insecurity and its attendant problems of hunger and malnutrition. The conceptual and empirical materials outlined in these sections provide the context for understanding my research focus, questions and intended contributions, all of which are outlined in the fourth section. The chapter concludes with a discussion of the research methodology, which relies on secondary sources in the form of government and NGO reports and other “grey literature”, in combination with

primary data gathered through qualitative interviews. This chapter also presents the structure of the thesis.

## **1.2 FOOD SECURITY / FOOD SYSTEMS**

The study of food policy, Coveney (2003) argues, is critical to public health, as access to sufficient nutritious food is central to a healthy life and growth; it can also reduce stress and other adverse health problems that humans encounter (Hamelin & Hamel, 2009). Food is one of the necessities of life, which must be satisfied together with other developmental issues. Inadequate nutrition is considered as a measure of poverty in many societies or indeed as synonymous to poverty (Kuwornu et al., 2013). Prior to the 1970s, “food security” was mainly understood in terms of national food production and international trade, but with time, the concept has been expanded to include households’ and individuals’ access to food (Mavengahama et al., 2013). This expansion of the concept recast food security as a problem that spans from the individual to the global level. Food policies tend to deal with food security at the national level; however, it is also a micro issue, which may be measured at the household level (Berry et al., 2015). At this micro-scale, food insecurity is the inability of a household or individuals to meet their daily-required food consumption levels in the face of fluctuating production, food price and income (Moharjan & Chhetri, 2006). The absence of food security is therefore influenced by multifaceted factors (Kuwornu et al., 2013).

Food security has received a lot of attention in recent years from both academics and non-academics (Lang & Barling, 2012) and this increase in attention was particularly noticeable after the 2007-2008 and 2010 world food price crises, which resulted in the call for greater investment in agriculture, especially in developing countries (Candel, 2014). The concept of food security, however, originated over 40 years ago, at a time of global food crises and has gradually

evolved with time. The initial focus, Berry et al. (2015) argue, was mainly on food production; it then expanded to include the physical, economic and sociocultural accessibility of food, its utilization, and more recently, the stability of these dimensions.

The World Food Conference of 1974 defined food security as the “availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices” (Berry et al., 2015, p. 2; Wakefield et al., 2015, p. 83). This means that the focus of the conference was on increasing the production of food and creating sufficient reserves to avert global food shortages (Wakefield et al., 2015). The conference was organized in response to widespread hunger, famine and food crises in the early 1970’s, which resulted from extreme instability of agricultural commodity prices and turbulence in the currency and energy markets (Berry et al., 2015). The outcome of the conference was to recognize the critical needs and behavior of potentially vulnerable and affected people.

In 1983, the Food and Agriculture Organization of the United Nations (FAO) revised the definition of food security to capture economic as well as physical access to food, and to enshrine the importance of ensuring food access for all within a community, as the distribution of food to the needy was often incomplete even though there were increases in food supplies (Wakefield et al., 2015). This new conceptualization was an attempt to strike a balance between the demand and supply side of the food security discourse. Berry et al. (2015) argue that this reconceptualization of food security was influenced by Sen’s emphasis on the “concept of entitlements of individuals and households to acquire food in order to avoid food insecurity, and as a target for combating hunger” (Sen, 1981 cited in Berry et al., 2015, p. 2).

In response to the continued existence of widespread malnutrition and growing concern about the capacity of agriculture to meet future food needs, a World Food Summit was convened by the FAO in 1996, where participating nations pledged to work toward reducing the number of undernourished people by half by the year 2015 (Berry et al., 2015; Wakefield et al., 2015). This summit led to The Rome Declaration on World Food Security, which expanded the initial focus on basic foodstuffs in the definition of food security to recognize the importance of nutrition, food safety, and cultural norms in constituting adequate food security. By the mid-1990s, Berry et al. (2015) argue, the concept of food security further evolved as terms like “nutrition security” and “food and nutrition security” emerged in order to combine all the new elements identified at the summit.

The 2002 State of Food Insecurity in the World report, published by the FAO (2002), stated that millions of people, including six million children under the age of five, died from insufficient nutrition each year. The majority of deaths were not because of the famines that attract headlines and emergency aid, but rather, were the effects of chronic hunger and malnutrition, a "covert famine" that stunts human development, saps individuals' strength and cripples their immune systems (FAO, 2002). In most instances, reduced life expectancy resulted from hunger and malnutrition combined with other factors like the prevalence of HIV/AIDS, which played an important role in the increased deaths in Sub-Saharan Africa. Findings of the FAO report led to a revised definition of food security: “when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (Wakefield et al., 2015, p. 84). This revision was an attempt to, (a) capture emerging concerns about social barriers to food access, which were distinct from physical and economic barriers, and (b) emphasize the

connection between food and an active lifestyle, thereby incorporating into the notion of food security a concern for the rise of over-nutrition and obesity, which are regarded as key public health challenges in some parts of the world (Wakefield et al., 2015).

The last significant alteration to the definition of food security came at the 2009 World Summit on Food Security, where ‘stability’ was added to the definition, in order to capture the ability of food systems to withstand shocks, whether natural or human-made (Berry et al., 2015). The resulting definition of food security is as follows: “food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (FAO, 2009, p. 8). With this definition, availability, accessibility, utilization and stability have been identified as the four dimensions or pillars of food security (Mavengahama et al., 2013). The 2009 World Summit on Food Security was organized in the context of oil and agricultural commodity prices spikes experienced in 2007–08. Besides the increased prevalence of global food insecurity, Donald et al. (2010) argue that the conventional agro-industrial food system had led to food safety scares, declining rural communities, soil and water depletion, rising obesity and diet- related health problems. Analysis of the food crisis witnessed during that period suggested that the food system was under stress despite ample global production, indicating that the prevailing policy focus on primary food production was flawed (Lang & Barling, 2012).

Lessons learnt from the 2007–08 food crisis further led to a shift of focus from the conventional notion of food security centered on raising production, to the notion of food systems, seen to be more socially and ecologically sensitive, stressing the need to address a complex array of problems, not just production (Lang & Barling, 2012). A food system, according to the FAO (2007), is a set of dynamic interactions between and within bio-

geophysical and human environments that influences both activities and outcomes all along the food chain, including food production, processing, storage, distribution, exchange, preparation and consumption. In other words, ‘food systems’ cover all the processes involved in putting food on the table, beginning with food production or farming, through distribution and acquisition, to consumption (Cassidy & Patterson, 2008). According to a food systems perspective, food security is the outcome of effective food systems (Tacoli et al., 2013); the performance of the food system at global, national and local levels determines whether food security is achieved or not. In other words, food security is a matter of distributional justice, which is embedded in the food system (Sustainable Development Commission, 2009).

Although many reports emphasize agricultural productivity as key to achieving food security, Lang and Barling (2012) argue that the food systems approach is also essential to achieving food security. That is to say, there is the need for the food security concept to clearly incorporate issues related to environmental and social challenges to the food system as a whole (Anderson & Cook, 1999). According to this current view, food security can be broadly defined as a situation in which all community members are able to attain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community or individual self-reliance (Hamm & Bellows, 2003).

In summary, the meaning of food security has changed over time, evolving from relatively straightforward concerns with global food production and supply to include a more nuanced understandings of the limits to food access, while also reflecting the shifting interests and levels of involvement among various state, academic, and civil society actors (Wakefield et al., 2015). Over the course of its development, the discourse on food security has produced several additional terms that help policy makers and academics to capture the multiple

dimensions and complexities of the issues (Lang & Barling, 2012). Among these key terms are “food democracy”, which tries to capture the need for full social engagement with decisions on food; “food resilience”, which captures the capacity to recover from or withstand shocks; “food rights”, which capture the ethical principles that shape food supply; and “food sovereignty”, which has received much attention in recent years (Desmarais & Wittman, 2014). Food sovereignty is defined as “the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems” (Patel, 2009, p. 666). This concept places those who produce, distribute and consume food -- rather than the demands of markets and corporations -- at the heart of food systems and policies. Seen by some as a logical precondition for genuine food security, the concept champions the right of nations and individuals to produce food from their own territory and determine the conditions of the food they consume (Patel, 2009).

Evidence of food insecurity suggests that food systems are under stress, leading an increasing number of scholars or policy makers to argue that an extensive change towards sustainable food systems provides the best route to food security (Sustainable Development Commission, 2009). Even though policy debates about food security are still dominated by the focus on increasing food production, official analyses now also attempt to address sustainability (Godfray et al., 2010), which has been introduced into the international discussions on food security through the notion of sustainable development (Berry et al., 2015). The Sustainable Development Commission (2009) argues that sustainability should be the basis on which food is produced and consumed to ensure a healthy living for all. The main constraints to achieving food security include “world population rising to nine billion by 2050; climate change looking certain, and requiring adaptation and mitigation; water stress; pressures on land use; finite fossil fuel



sources; requirements either to increase fertilizer use dramatically or to build soil fertility (or both); and more” (Sustainable Development Commission, 2009, p. 4). In this global contexts, the main challenge is how food systems can be adapted to climate change, land use pressures, water stress and the social issues that are associated with these constraints. This recent preoccupation with the sustainability of food systems raises the important issue of what is meant by sustainability in a complex system that includes production, distribution and consumption (Lang & Barling, 2012). To Donald (2008), the underlying principle of food system sustainability is that all components of the system must be sustainable, not just the production end.

To conclude, this section has outlined the development of the concept of food security, its relation to the notion of food systems, and the significance of examining food security from a sustainable food systems perspective. The next section looks at the role played by international development towards achieving a food secure world.

### **1.3 FOOD SECURITY IN RELATION TO INTERNATIONAL DEVELOPMENT**

Having introduced the key concepts of “food security” and “sustainable food systems” in the previous section, this section describes the role international development has played in attempting to achieve food security among populations of the Global South; food security is a key priority for most international development agencies.

Although food security remains a problem ranging from the individual to the global level (Berry et al., 2015), there is a global network of nations and development organizations working towards achieving a food secure world through food assistance and sustainable agricultural development and research. Food insecurity and other dimensions of poverty are particularly devastating in developing countries and a lot of resources have been assigned to programmes aimed at eradicating them by various international development organizations and governments

(Quaye, 2008). Adequate nutrition for both children and adults is a basic requirement for the development of society as a whole (see Quaye, 2008; Hamelin & Hamel, 2009), so the discourse of food security has been on the development agenda for decades, evident in the persistent actions of the FAO and other development agencies across the globe whose mandate specifically concentrates on food issues (Alcock, 2009).

According to FAO (2015a), “a world free of hunger and malnutrition where food and agriculture contribute to improving the living standards of all, especially the poorest” (p. 10) has been its vision since its inception in 1945. As an organization of the United Nations, the FAO promotes the political commitment of its member states to food security and nutrition, making up-to-date information on the challenges and solutions related to hunger and malnutrition readily accessible (FAO, 2015a). This organization works with the ultimate goal of eradicating hunger, food insecurity and malnutrition; the elimination of poverty and the achievement of economic and social progress for all; and the sustainable management and utilization of natural resources (consisting of land, water, air, climate and genetic resources) for the benefit of present and future generations (FAO, ca. 2016).

The other two organizations of the United Nations working on food issues are the International Fund for Agricultural Development (IFAD) and the United Nations World Food Programme (WFP). IFAD was established as an international financial institution in 1977 to finance agricultural development projects primarily for food production in developing countries (IFAD, ca. 2016). The WFP on the other hand, is a voluntarily funded organization (donations from nations, institutions, private sector and individuals) of the UN established in 1960 with a vision of a world in which every man, woman and child has access at all times to the food needed for an active and healthy life (WFP, ca. 2016). In times of emergency, the WFP gets food

to victims of natural and human-made disasters, using food to help communities rebuild their shattered lives. In 2014, for instance, 32 million metric tons of food were distributed to 80 million people in 82 countries by the WFP, with 17 million children receiving school meals and take-home rations for their families (WFP, ca. 2016).

Depending on the type of food insecurity identified in a particular area, these UN organizations (FAO, WFP, IFAD) assist with the provision of food aid and other needed development interventions for the affected community to achieve food security. The international development agencies of Global North nations like the US (USAID), Canada (Global Affairs Canada), Japan (JICA), Australia (AusAID) and the UK (DFID) have also been active in development programmes aimed at improving food security. Each agency has its operational countries based on bilateral and multilateral relations, and ensuring food security forms part of their mandate in their operational areas.

The United States Agency for International Development (USAID) for instance, works in over 100 countries to advance food security and agriculture, improve environmental sustainability, and provide humanitarian assistance in the wake of natural and human-made disasters, among other things (USAID, ca. 2016). Global Affairs Canada, just like USAID and other development agencies, has also been a key stakeholder in the global fight towards food security. Global Affairs Canada has “Increasing Food Security” as one of its three international development priorities. Canada's food security strategy focuses on food assistance and nutrition, sustainable agricultural development, and research and development, as the primary ways of dealing with challenges of food security (Global Affairs Canada, ca. 2016). The World Food Programme (WFP), the International Fund for Agriculture Development (IFAD) and the Consultative Group on International Agricultural Research (CGIAR) are key partners of

Canada's development agency. While the WFP and IFAD are well known organizations of the United Nations, the CGIAR is the only worldwide partnership (with 15 International Research Centres) addressing agricultural research for development, whose work contributes to the global effort to tackle poverty, hunger and major nutrition imbalances, and environmental degradation (CGIAR, ca. 2016).

The WFP's global food security update as of June 2015 reported that the Nepal earthquake had significantly impacted food security, with an estimated 1.4 million people in need of food assistance, while regional crop production in Southern Africa was expected to decrease as a result of an unusual and erratic 2014/15 rainfall season (WFP, 2015a). Additionally, the protracted conflict in Syria had led to an estimated 9.8 million people in need of various levels of food, agricultural and livelihood assistance (ibid). The food security situation in Ukraine had also deteriorated since October 2014 with 30% of the population in conflict-affected areas consuming an inadequate diet (WFP, 2015a). These statistics suggest that the impact of both natural and human-induced disasters on food security is great, which in many cases means that food insecurity will continue to persist unless food systems are sustainable enough to withstand the shocks that are produced as a result of these disasters (Sustainable Development Commission, 2009; Berry et al, 2015).

Although a recent publication of the FAO (2015a) admits to the production of enough food to feed the entire population of the world, "almost 800 million people still suffer chronic undernourishment. Among children, it is estimated that 161 million under-fives suffer from chronic malnutrition (stunted growth), almost 99 million are underweight, and around 51 million suffer from acute malnutrition (emaciation)" (p. 85). This suggests that not every international development aid programme has been effectively implemented to achieve the desired results.

The “2005 Paris Declaration on Aid Effectiveness” (which was a practical, action-oriented roadmap to improve the quality of aid and its impact on development) and the subsequent “2008 Accra Agenda for Action (AAA)” (which was designed to strengthen and deepen implementation of the Paris Declaration) (OECD, 2015), both acknowledge that development aid is not always effective. Doubts about development aid effectiveness have not been limited to policy circles alone, academics Ratha et al. (2008) and Kharas et al. (2011), among other scholars, have also questioned and proposed ways of improving aid effectiveness.

One strand of evaluation for why international development interventions have not been effective at eradicating food insecurity comes from political ecologists who argue that development agencies have been agents of domination, who cause rather than solve poverty and environmental degradation, by strengthening the power and authority of the state and international actors over local communities (Neuman, 2009). It is undeniable that most development agencies have the welfare and development of local communities at heart. However, the political and economic interests of donors affect how much aid is allocated to poverty alleviation. In addition to the increased emphasis on aid conditionality that require recipients of development assistance to adhere to certain policies, Thomas and Allen (2000) argue that a relatively small amount of development aid is used directly to alleviate poverty in the Global South. International development interventions, Barry-Shaw and Jay (2012) argue, have helped secure the continued implementation of neo-liberal reforms by “diverting the energies of the poor away from political protest and into ways of coping with deepened poverty that did not challenge its root causes” (p. 17). Such interventions have shifted the blame for poverty away from social, political or structural factors that cause poverty and onto the poor themselves. In most cases, aid conditionality, and deficiencies in the design and implementation

of international development programmes, perpetuate severe and deepening poverty in the developing world.

Development interventions and programmes fail to consider the need to address a complex array of problems that perpetuate poverty and underdevelopment in the Global South (Lang & Barling, 2012). The World Bank and International Monetary Fund's Structural Adjustment Programme (SAP) is a classic example of an international development intervention which resulted in widening the income gap between the rich and the poor, as well as that of the rural and urban population (see Rono, 2002; Sowa, 2002) in most developing countries, an unintended result. This is to say that international development agencies have achieved limited success in their operations, hence political ecologists and critical development scholars remain skeptical about the ability of development interventions to help achieve food security in the Global South, even though these agencies are vital stakeholders in the drive for a food secure world.

In a nutshell, this section has outlined the role international development has played in attempting to achieve food security among populations of the Global South. A greater share of development interventions is one-sided, focusing on increasing food production while failing to consider the impact of food storage, processing and distribution on achieving food security. Although international development agencies have identified food security as one of their key priorities, they have achieved only limited success, leading political ecologists and critical development scholars to conclude that development interventions may be doing more to hinder than help the achievement of food security. The food systems perspective, and for that matter, developing sustainable food systems, may provide a better opportunity for international development agencies to address the complex array of problems that continue to hinder the

achievement of food security in the developing world. The next section narrows the focus to food security and food systems in Ghana.

#### **1.4 FOOD SECURITY/ FOOD SYSTEMS IN GHANA**

Moving from the general conceptualization of food security and food systems to a specific geographical context, this section focuses on food security and food systems in Ghana. The discussion in this section concentrates on the most impoverished and most food insecure regions in the country.

The most important determinant of food insecurity in developing and less developed countries is poverty (Kuwornu et al., 2013). Poverty is endemic in Africa, and continues to resist efforts aimed at eradicating it. A recent ranking of the gross domestic product (GDP) of countries based on purchasing-power-parity (PPP) per capita from the IMF has established that 19 out of the 23 poorest countries in the world are located in Africa (Pasquali, 2015). Poverty in Africa has been compounded by conflicts and civil war, political instability, droughts, high external debt, and the rapid rise and spread of HIV/AIDS (Kuwornu et al., 2013).

According to Valdes et al., (2010), more than 80 per cent of the smallholder farmers in the world are food insecure and depend on land as their primary source of livelihoods. Farming households are also the most affected in terms of food insecurity and poverty in Africa, especially smallholder farming households, although the rest of the population depends a lot on their production. Due to the prevalence of widespread poverty, drought, soil degradation, deforestation, and low agricultural productivity in Africa, access to food is limited (Kuwornu et al., 2013). In Ghana, poverty has reduced from 58% to 29% since 1990 (Kuwornu et al., 2013; WFP, 2015b), but still almost half of Ghanaian farming households (46%) falls below the poverty line (WFP, 2009). According to the statistics of World Food Programme (2009), about

1.2 million people, representing 5% of the population of Ghana are food insecure and two million people are vulnerable to become food insecure in the event of any natural or human-made shock.

Despite recent increases in commercial farming, agriculture in Ghana remains largely subsistent and the total population engaged in agriculture has reduced considerably since the 1960s (Kuusaana & Eledi, 2015). A total of 61% of the Ghanaian population comprises farmers in 1960, but the 2008 Ghana Living Standards Survey (GLSS) revealed that a total of 56% of the working population worked in agriculture between 2005 and 2006 (Ghana Statistical Service, 2008). While these figures reinforce the relevance of agriculture as a source of food production and livelihood in Ghana, changing climatic patterns and over reliance on rain-fed agriculture pose a serious challenge to food security in Ghana. It is estimated that crop yields from Africa's rain-fed farm production may decrease by 50% as result of changes in climatic conditions by 2020, with an expected corresponding increase in the demand for food by more than 50% due to rapid population growth (Kuwornu et al., 2013). Additionally, Ghana is only self-sufficient in the production of root and tubers (MoFA, 2007), while having high deficit in the production of cereals, meat and fish; cereals are the most widely consumed food crop in Ghana (Kuwornu et al., 2011). Even self-sufficiency in terms of root and tuber production in the country is unreliable due to reliance on rain-fed agriculture, so there are varying periods of production scarcity, sufficiency and surplus (MoFA, 2007).

While Ghana has made progress in reducing the portion of its population living in extreme poverty, food security still remains a challenge, especially in the three deprived northern regions (although it has been fairly stable at the national level) (Kuwornu et al., 2013, WFP, 2015b). Northern, Upper East and Upper West together make up 70% of the poor at the national



level, and food insecurity rates in these regions range from 20% to 37% of the population (WFP, 2012). Agriculture is the dominant livelihood among households in northern Ghana with 88% relying on crop cultivation as one of their three main income-generating activities. The World Food Programme (2012) argues that farmers in that part of the country face many structural issues, which include inadequate rains and low soil fertility, as well as challenges to irrigate their farms and make use of fertilizers and pesticides due to a lack of financial resources. As northern Ghana is characterized by an erratic weather pattern of a short rainy/wet period followed by a very long dry spell, households tend to constantly deal with seasonal challenges of accessing food, with seasonal migration established as a one of the coping strategies (see Rademacher-Schulz, 2014).

According to the World Food Programme (2015b), recurrent natural disasters, the high food and fuel price crisis, and regional disparities, have increased communities' vulnerability to food insecurity and malnutrition. In light of the nation's high current account and budget deficit, export dependency, aid dependency and low international reserves, safety net programmes are required for the most deprived areas, since the country is also vulnerable to external shocks. There is therefore the need to create in northern Ghana, “genuinely sustainable food systems, where the core goal is to feed everyone sustainably, equitably and healthily; which addresses needs for availability, affordability and accessibility; which is diverse, ecologically-sound and resilient; and which builds the capabilities and skills necessary for future generations” (Sustainable Development Commission, 2009, p.10). Although food production is a key challenge in the area, tackling food security through the lens of sustainable food system appears to be a useful way forward.

To conclude, this section has examined food security and food systems in Ghana, showing that the three northern regions of Ghana are the most impoverished and the most food insecure of all ten regions in the country. As highlighted in the section, it is ironic to note that households with farming as their main source of livelihood are most likely to suffer food insecurity and attendant problems of hunger and malnutrition.

## **1.5 RESEARCH OBJECTIVES**

Using the notion of sustainable food systems which is an emerging perspective, argued to be more socially and ecologically sensitive, as the assessment criteria, the objective of this thesis is to assess efforts by international development agencies to improve food security in northern Ghana. The research focuses mainly on the World Food Programme's operation in northern Ghana.

According to the World Food Programme (2015b), Canada and Japan are the project's key donors and a total of USD 56,339,447 is required for the successful completion of this project. The project is made of three components: support for primary and girls' education, nutrition support for vulnerable groups, and resilience against climatic shocks and support for livelihoods. An estimated 860,725 people in northern Ghana were expected to benefit from this project (ibid). In addition, the WFP's Purchase for Progress project (P4P) implemented in Ghana is also assessed in this thesis. The P4P project is considered in this thesis due to its linkage to the WFP's country programme. P4P is a product-marketing project, which introduced local farmers to improved farming techniques in order to ensure the production of standardized food products. P4P made standardized food products locally available for the basic nutrition and food aid components of WFP's country programme, as the agency planned to acquire 60% of their food

supplies from the local market and that was only achievable through the implementation of the P4P initiative (WFP, 2011).

In terms of the rationale for selecting these projects, the WFP interventions in northern Ghana that are assessed in this thesis represent direct humanitarian aid (nutrition support for vulnerable groups) and long-term development assistance (support for education, climate resilience and P4P), hence providing some perspective on these two forms of international development assistance. Northern Ghana was the focus of the World Food Programme's report on Ghana's Comprehensive Food Security and Vulnerability Analysis (WFP, 2012), and the implementation of the projects selected for this thesis (WFP's country programme and P4P) was informed by the findings of this report. Since majority of the WFP's work in Ghana is concentrated in the northern half of the country, the geographical coverage of the agency's operations is ideal for this thesis (see figure 1.1).



Figure 1.1: WFP Ghana Operations as at 2015.  
Source: Adopted from Gardner, Pasquet and Casely- Hayford, 2015.

Furthermore, the agency's country programmes were operationalized at a time that coincides with the paradigm shift from the production-focused notion of food security to the more socially and ecologically sensitive notion of food systems (Lang and Barling, 2012). The purpose of the assessment I plan to undertake is to determine the effectiveness of the project's design and operationalization for establishing sustainable food systems in northern Ghana. The impetus for selecting this project is to evaluate how this recent development intervention relates to the evolving discourse of food security and food systems.

In order to achieve my research objectives, I need to answer four main research questions:

1. What are the characteristics of a ‘sustainable food system’?
2. How do food systems in northern Ghana compare to ‘sustainable food systems’ and what are the impediments to achieving ‘sustainable food systems’ in northern Ghana?
3. How is the World Food Programme’s country projects designed and operationalized and how effective is it in addressing the impediments to achieving sustainable food systems in northern Ghana?
4. What lessons can be learned from the evaluation of the WFP’s country projects to design future international development interventions that would effectively nurture sustainable food systems in Ghana?

By answering these questions, the thesis has the potential to contribute to:

- ❖ Scholarly literature on sustainable food systems by providing a clearer understanding of the debate and concept of sustainable food systems and food security.
- ❖ Scholarly understanding of the food systems in northern Ghana in relation to the notion of sustainable food systems.
- ❖ Development policy and practice towards nurturing sustainable food systems in northern Ghana.

## **1.6 RESEARCH METHODOLOGY**

The general purpose of research is to find answers to research questions, and Draper (2004) argues that a well-executed research design ensures that research questions are answered in the most rigorous way possible. There is no doubt that the methodology applied in any research has a significant influence on the findings (Bryman, 2007). The framing of a study, its objectives and the research questions to be answered affect the choice of methodology for a study (Winchester and Rofe, 2010). In order to answer the research questions, this study utilized a combination of documentary analysis and qualitative interview data. The two methods are discussed in the following sub-sections.

### **1.6.1 Documentary Research Technique**

As the primary method for this study, the documentary research technique was used to (a) track food insecurity in northern Ghana, and (b) develop an in-depth understanding of the various components of WFP's operations in Ghana. The technique entails the analysis of documents that contain information about a phenomenon of interest to the researcher. Gaborone (2006) argues that the technique is mostly used to categorize, investigate, interpret and identify the limitations of other popular sources of research data. The documentary research method, Mogalakwe (2009) asserts, is just as good and sometimes even more cost effective than in-depth interviews, social surveys or participant observation. In this study, the technique was used in combination with data from qualitative interviews in Ghana as a means of triangulation. Through triangulation, "the researcher attempts to provide a confluence of evidence that breeds credibility" (Bowen, 2009, p. 28).

The documentary research technique was identified as the primary source of data on policies and development projects in northern Ghana, supplemented with data generated from interviews. Interactions with interview participants played a vital role in terms of finding and selecting documents for this study. During the interviews, the researcher was referred to various policy and project evaluation reports of the government of Ghana and WFP, which were relevant to the framing and scope of the study. WFP's periodic assessment of food insecurity in northern Ghana as well as evaluation reports on the agencies projects in Ghana were provided to the researcher. Documents available in the public domain that were suggested by interview participants included government food and agricultural policies, and statistical reports. Academic literature on sustainable food systems, food security in northern Ghana and relevant concepts vital to the study were also identified by the academics who were interviewed in Ghana.

All the documents selected for data extraction and analyses were evaluated to ensure their relevance to the research problem and purpose. Bowen (2009) argues that it is essential to determine the authenticity, and credibility of the selected documents. The documents were examined for relevant statistics, facts and reports on food insecurity in northern Ghana as well as information about each component of WFP's operations in the region. By using the documentary analysis technique, the documents were analyzed with the objective of overcoming the deficiencies of data generated – inadequate/insufficient access to in-depth information – from the qualitative interviews, all geared towards ensuring that empirical knowledge is produced and grasped (Bowen, 2009; Gaborone, 2006). The documentary research technique used in this study was also complemented with qualitative interviews in order to eliminate document selection bias and inadequacy of data obtained from the documents. In addition, Ahmed (2010) and Bowen (2009) argue that the documentary research technique is a less time-consuming way of ensuring broad coverage of events and is seen to be more efficient than other research methods. Making use of WFP's project documents and evaluative reports for this study was very helpful.

### **1.6.2 Qualitative Interview Data**

As the secondary method for this study, qualitative interviews were useful in (a) understanding the impediments to achieving sustainable food systems in the northern Ghana, and (b) gaining insights on the various components of WFP's operations in northern Ghana. According to Valentine (2005), qualitative interviews allow respondents to raise issues that the interviewer may not have anticipated, so data generated is rich, detailed and multi-layered, producing a deeper picture compared to the findings of a questionnaire survey. In the case of this study, qualitative interview data was used to complement documentary data. Interview data was used to add nuance and perspective, as well as provide insights and interpretations to data

obtained from the analysis of policy and project documents. Besides interview transcripts adding nuance to the documentary analysis, interactions with the respondents also provided some direction for the primary research technique, mostly helping with the identification and selection of documents utilized in the study.

All interview participants were professionals with in-depth knowledge and understanding of food security issues in northern Ghana, especially as they relate to the WFP's operations. Data was generated through interactions with professionals working for (a) the programme's implementing body (WFP), (b) partner Non-Government Organizations (NGO's) such as Japan International Cooperation Agency (JICA) and Adventist Development & Relief Agency (ADRA), who were involved in the programme, (c) ActionAid for their operations in northern Ghana, as well as (d) Ghanaian academics who specialize in food security. In total, seven interviews were conducted during the field work. The interviews include one interview with the WFP representative who explained the various components of their country programme, and interviews with the JICA representative and two ADRA representatives about their knowledge of food security in northern Ghana and their involvement in the WFP country programme. In addition, there were interviews with an ActionAid representative about experiences working on food security in northern Ghana, and two Ghanaian academics who have worked and published materials about food security in northern Ghana. All interviews were audio-taped with the consent of the participants. A slightly different semi-structured interview guide was used for each of these groups of participants depending on the kind of information sought.

Research participants received (a) an introductory letter, (b) invitation letter, and (c) a copy of the relevant interview guide, hand-delivered by the researcher. When delivering these letters to the participant, I had the opportunity to further explain or answer questions about the



research. Some participants expressed their willingness to participate in the study at that time and granted the interview. However, most participants scheduled later dates for the interview, with some respondents limiting the interview to a specific amount of time due to their busy schedules. All interviews were conducted in the offices of the research participants after consent had been sought, and were conducted in English since that is the accustomed language of business in Ghana. After the interviews were conducted, I thanked the participants for their participation, reminded them of the right to withdraw their interview material from the study without penalty, offered to provide them with a copy of their interview transcript for review and correction, and informed them that a copy of the final thesis will be made available to their organization. Approximately a week later, a thank you letter was emailed to the participants thanking them for their involvement in the study.

The representative from JICA was the first participant interviewed and the session lasted for 27 minutes. The interview could have lasted beyond 27 minutes had it not been for the busy schedule of the respondent and reluctance to grant another interview. As requested by the participant, the interview was transcribed and submitted for review. The final interview was with the ActionAid representative and lasted for 54 minutes. On average, an interview session lasted for approximately 50 minutes. The produced transcripts were subjected to latent-content analysis, which involves coding of transcripts for easy grasp of varying opinions on certain issues (Dunn, 2010). This helped in determining the basic and underlying meanings of what was said, an important feature of qualitative research.

## **1.7 THESIS STRUCTURE**

This thesis is divided into five (5) chapters. So far, this first chapter has presented the background and contextual ideas which informed the thesis. The second chapter throws more

light on the concept of sustainable food systems, and is geared towards answering the first research question of the thesis. Various concepts are assessed to help identify the characteristics of ‘sustainable food systems’. The third chapter answers the second research question. The chapter assesses the food system in northern Ghana, and identifies the impediments towards achieving sustainable food systems in the region. The fourth chapter zooms into the efforts of international development agencies in northern Ghana. The chapter provides an overview and analysis of WFP’s projects and evaluates their effectiveness and usefulness for achieving sustainable food systems. The fifth and final chapter provides a summary of the thesis, with lessons learnt and recommendations for both local and international policy makers as well as academics.

## **CHAPTER TWO: SUSTAINABLE FOOD SYSTEMS**

### **2.1 INTRODUCTION**

This chapter addresses the first research question of the thesis: “What are the characteristics of a sustainable food system?”

In order to establish the characteristics of a “sustainable food system”, the first main section examines the notion of sustainable food systems and explains the need to consider the concept as a useful way of achieving food security. I argue that the concept has its roots in various discourses of sustainability. The sustainability discourses discussed include sustainable development, sustainable agriculture, sustainable livelihood and sustainable transition. In addition, the concept of food sovereignty and the value-chain approach are discussed in the section as they provide useful insights into what it means to create sustainable food systems. The second main section presents the characteristics of sustainable food systems. Moving away from the comprehensive characteristics identified by various scholars, the section presents eight practical ways of creating sustainable food systems in the context of a developing country like Ghana, where the local economy is highly agrarian. The proposed characteristics of sustainable food systems are developed from the concepts discussed in the first main section. The third main section before the chapter concludes discusses the conceptual and practical challenges of creating sustainable food systems. I develop the argument that the emergent nature of knowledge, the issues of sustainability tradeoffs, and the importance of power and politics, present challenges in creating sustainable food systems. The chapter concludes that since sustainability is not an endpoint but rather a process, there is no fixed definition for sustainable food systems. Success in conceptualizing and creating sustainable food systems will depend on more research and continued reflection.

## 2.2 CONCEPTUALIZING ‘SUSTAINABLE FOOD SYSTEMS’

Food systems encompass all the processes involved in putting food on the table, beginning with food production or farming, through processing, distribution and acquisition, to consumption (Cassidy & Patterson, 2008). The performance of the food system at global, national and local levels determines whether food security is achieved or not. In other words, food security is the outcome of effective food systems (Tacoli et al., 2013). In light of this conceptualization of food systems, Lang and Barling (2012) argue that the food systems approach is essential to achieving food security. That is to say, the food security concept needs to clearly incorporate issues related to environmental and social challenges to the food system as a whole (Anderson and Cook, 1999).

In the “*Food security and sustainability: the perfect fit*” report, the UK’s Sustainable Development Commission (2009) argues that evidence of food insecurity -- especially in light of the 2007/08 food crisis -- suggest that food systems are under stress. The crisis led to the recent preoccupation with the sustainability of food systems, and raised the important issue of what is meant by sustainability in a complex system that includes food production, distribution and consumption (Godfray et al., 2010; Lang & Barling, 2012). According to the report, sustainability should be the basis on which food is produced and consumed to ensure a healthy living for all (Sustainable Development Commission, 2009).

Technological advancements in agriculture and food production shows that the world has the technical means and resources to eradicate hunger at the global scale (FAO, 2009). However, structural changes to the existing food regime are needed, and sustainable food systems could be seen as a key dimension in addressing this need (Blay-Palmer, 2010). The current industrialized, large-scale, and increasingly globalized food system is a worry for all (Kloppenburg et al., 2000), due to the fact that it is huge, environmentally degrading, wasteful, placeless, unhealthy, unjust,

and disempowering (Hinrichs, 2010). According to Koc (2010), this commodified food system is flawed with three main problems, which affect the quality of life of many people globally, and raise concerns about achieving food security. Koc identifies the problems as “unequal access to means of livelihood, concerns about the sustainability of current practices in the agri-food system, and worries about health and safety of modern foods and dietary practices” (Koc, 2010, p. 37).

It is disturbing to note that the commodification of the modern food system has systematically encouraged destruction of rural livelihoods, while turning millions of people into urban consumers suffering from either malnutrition or obesity. In addition to social and geographic inequalities in terms of income, wealth and consumption patterns between the North and the South, and between the poor and the rich, there are inequalities in terms of market power that effect livelihoods of the great majority of the world’s population (Koc, 2010, pp. 38-39). Hinrichs (2010) asserts that sustainable food systems, with care and some creativity, can provide the stepping-stone for thinking about the theory and practice of food and agriculture. Sustainability of the food system should be seen as a societal objective (Koc, 2010).

Food is one of the basic needs and necessities of life. Conceptually, food is a product of a set of dynamic interactions between and within bio-geophysical and human environments (FAO, 2007), therefore the notion of sustainable food systems adopts a systems approach which is seen to be more social and ecological, stressing the need to address a complex array of problems causing food insecurity (Lang & Barling, 2012). Food sits at the socio-ecological nexus of the sustainable food systems framework. Hinrichs (2010), commenting on the power of food, argues:

In production, food ties us to the land – land in its broadest, indeed its Leopoldian land-as-community sense. And in consumption, food nourishes bodies, both human and non-human, with crucial implications for health. In this respect, food’s material and cultural salience, and its extraordinary reach into and throughout lives, makes it a compelling

focus for research and practice. We know food as those materials produced and gathered, sometimes processed and traded, and ultimately eaten and imbibed by humans. We turn to food most fundamentally for nourishment, but pleasure figures too. As biological necessity, but also cultural expression, as personal taste and group tradition, as profit opportunity and as human right, food serves as fulcrum for endless analysis. Given its material and social importance, food beckons as an entry point to questions of sustainability that involve joining environmental and socio-economic concerns. (p. 19)

It is useful to adopt a systems approach in conceptualizing sustainable food systems, as “the advantages of the modern food system are unevenly distributed wherein the inequalities are not due to market failure but rather, systemic problems created by the current structures of the market economy” (Koc, 2010, p.39). In light of the systemic problems created by the current structures of the market economy, the systems approach is considered useful for its comprehensiveness, connections, places of leverage and potential feedback. The approach “avoids the implied linearity of food chains and conjures a bigger picture than food networks” (Hinrichs, 2010, p. 26).

The sustainability aspect of the conceptualization of sustainable food systems, however, requires deeper elaboration. Indeed, Koc (2010) argues that similar to other alternative discourses of food such as food democracy, or food justice, “sustainability has been a vague concept defining a condition that changes depending on the political and ideological perspective of the user” (p. 37). There is the need to examine the legacies and interplay of different sustainability discourses to deepen knowledge on sustainable food systems. As Hinrichs (2010) asserts, paying attention to the shifting tides of the sustainability discourse can inform and potentially strengthen the theory and practice on food systems. In that light, the discourse of “sustainable development”, “sustainable agriculture”, “sustainable livelihood”, and “sustainable transitions” are discussed in the following sub-sections, in addition to the concepts of “food

sovereignty” and “value chain approach” due to their usefulness and efficacy in deepening the knowledge and understanding of sustainable food systems.

### **2.2.1 Sustainable Development**

The 1987 publication of “*Our Common Future*” by the UN World Commission on Environment and Development (WCED) defined sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs (WCED, 1987). Hinrichs (2010) argues that this recognition of intergenerational obligation was something new, encoding an ethical logic for the preservation of ecological resources and integrity. The conceptualization of sustainable development was based on the principles of intra- and intergenerational justice that integrate environmental, social, and economic aspects at the same time. According to the Commission (WCED, 1987), the pursuit of sustainable development requires:

- ✓ a political system that secures effective citizen participation in decision making;
- ✓ an economic system that is able to generate surpluses and technical knowledge on a self-reliant and sustained basis;
- ✓ a social system that provides for solutions for the tensions arising from disharmonious development;
- ✓ a production system that respects the obligation to preserve the ecological base for development;
- ✓ a technological system that can search continuously for new solutions;
- ✓ an international system that fosters sustainable patterns of trade and finance; and
- ✓ an administrative system that is flexible and has the capacity for self-correction.

These requirements were presented as goals that should underlie national and international development (WCED, 1987). However, the implementation of this noble concept is very challenging, causing scholars such as Carvalho (2001) to question its achievability. If one accepts that sustainable development is based on the principles of intra- and intergenerational justice that integrate social, environmental and economic aspects at the same time (WCED,

1987), then the “egg of sustainability” model does a better job in terms of identifying the hierarchy and interdependency between the three dimensions of sustainability compared to the “triangle of sustainability” (see Figure 2.1) (Birkmann, 2006). The egg of sustainability model identifies the linkages between the three dimensions with the environment as the outer sphere holding the social and economic spheres within. The economic sphere lies within the social sphere because economic growth can only be achieved depending on the human system created in the social sphere and the power of the social sphere is also limited by the environment. Therefore, to achieve sustainable development, there is the need to first consider the limits of the environment.

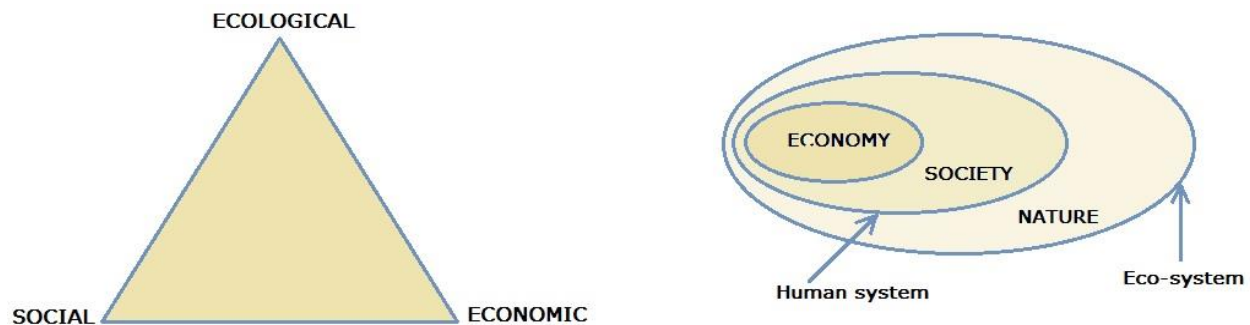


Figure 2.1: Triangle and egg of sustainability  
Source: Birkmann, 2006.

Indeed, it is necessary to move away from the environmentally depleting ways of production which are geared towards economic growth, toward more ecologically sound practices (Altieri et al., 2012). This is to say, sustainability cannot be achieved if economic growth is realized at the expense of the environment or the social (Birkmann, 2006). However, Hinrichs (2010) maintains that the sustainable development discourse “retains some core commitments to economic growth within its loose call to link and address human poverty and environmental deterioration” (p.22). As a way of ensuring equity, Koc (2010) highlights the need to democratize the food system, looking at food as a locus of the democratic process to



ensure that all have access to affordable, decent health enhancing food. Achieving equity requires “going beyond adequacy of food supply and stresses decency and social justice in the food system, wages, working conditions and internal equity” (p. 42).

The concept of sustainable development is embedded with lots of contested issues including the differing constructions of “needs” versus “wants” as well as issues regarding the possibility that the needs of future generations might not resemble those of the present. The concept is a rhetoric of hope that “we can have it all; economic growth, environmental conservation, social justice, and not just for the moment but in perpetuity” (Hinrichs 2010, p. 22).

### **2.2.2 Sustainable Agriculture**

The concept of sustainable agriculture originated from an increasing awareness of industrial agriculture’s negative impact on the environment, human health, and rural communities. If industrial techniques of production have evolved in response to a certain type of economy, Hoffman (2007) maintains that the success of sustainable agriculture will depend on the development of a different type of economy, one that is not driven by a competitive market system, but is based on cooperative community relationships. Sustainable agriculture focuses on the ecological soundness of the food production system, and Hinrichs (2010) argues that the main concern for sustainable agriculture is making farm production practices more energy efficient and protective of natural resources. The term also means a system of food production that is beneficial for its participants and society as a whole (Hoffman, 2007).

The rapid introduction of genetically modified organisms into the food system, together with the use of pesticides and synthetic chemical fertilizers within the industrial model of agriculture, remains a major concern for the health of humankind and the environment. According to Hoffman (2007), the industrial model of agriculture has not only resulted in a

decline in the number of producers and processors (representing an increase in scale and concentration of ownership), but also in the food and agriculture system's greater vertical integration as individual firms acquire control of each stage of production of particular commodities. Industrialized agriculture has its foundation in neoclassical economies according to which it is seen as a business. Lyson (2002) maintains that sustainable agriculture is framed by an emerging community-centered, problem-solving perspective so the two paradigms are "fundamentally different" (more than a difference in technology) and "essentially incompatible" (pp. 193,195).

In its broadest sense, the success of sustainable agriculture depends not only on the right technology, but more fundamentally on how the food system is structured. Proponents of sustainable agriculture, Hoffman (2007) argues, must pursue alternatives to the market driven neoclassical model of industrialized agriculture, to reestablish agriculture where it has been displaced by agribusiness. In effect, farmers must understand that sustainable agriculture "requires an economics of cooperation rather than competition" (p. 320). According to Hinrichs (2010), the current discourse of sustainable agriculture is more concerned with environmentally sound production and largely neglects any consideration of social equity and justice.

### **2.2.3 Sustainable Transitions**

While various dictionaries define transition as a "passage from one state, stage, subject, or place to another" (Transition, n.d.), Hinrichs, (2014) contends that "transition signals patterned movement - perceptible, if not immediately pronounced" (p.144). For example, transition takes place when people's diets shift to include more fats, sugar and animal protein, as they become wealthier (Dixon, 2009). Hinrichs (2014) assert that transition tends to be gradual in its occurrence, but its effects can be revolutionary and very consequential. The writer further argues that the "ecological and environmental constraints evident in global economic

development required transition to new systems of production, consumption and governance” (Hinrichs, 2014, p. 145). Scott (2016) stresses the importance of governing food systems “as it ties together the ‘who’ (which actor) with the ‘what’ (which strategies or initiatives) and the ‘how’ (which form of engagement or coordination) in building more resilient and sustainable socio-ecological systems” (p.193). That being said, there is the need to pay closer attention to identifying, and combining suitable policies with the right kind of planning, organizing and implementation of programs geared towards achieving the needed transitions in society.

As the most recent variant of the sustainability discourse, Markard, Raven, and Truffer (2012) argue that sustainability transitions refers to “long-term, multi-dimensional and fundamental transformation processes through which established socio-technical systems shift to more sustainable modes of production and consumption” (p. 956). This concept, more developed and discussed among European academics, originated from a Dutch partnership approach to long term policymaking aimed at transforming various sectors of their economy (e.g., in response to challenges such as climate change, and changing resource availability) (Hinrichs, 2010). Sustainability transition implies the management of resources, technology, and the economy to achieve more sustainable outcomes (O’Roirdan & Church, 2001).

Although the discourse of sustainable transitions has been sparsely applied to food systems (Markard et al., 2012), the concept is worthy of consideration due to its emphasis on the need for cautious planning and productive dialogue across levels and among actors in order to design and map out more sustainable pathways that are applicable to food systems (Hinrichs, 2010). The ideas of sustainable transition management are limited by the uncertainty and challenges associated with the goals of sustainable development (Hinrichs, 2014). In that vein, sustainable transition management, Walker and Shove (2007) suggest, can only handle

challenges of sustainability through “strategies of reflexive governance” (see also Voss & Kemp, 2005). That is, the politics of who defines and manages sustainable transitions needs far greater examination and scrutiny (Hinrichs, 2010; Walker & Shove, 2007).

#### **2.2.4 Sustainable Livelihood**

The concept of sustainable livelihoods is an integrating concept first proposed in 1987 by the World Commission on Environment and Development (WCED). Chambers and Conway (1992) argue that the concept is a combination of capabilities (as both an end and a means of livelihood), equity and sustainability. Hinrichs (2010) maintains that the concept arose from the recognition of food and income challenges facing the rural poor in many developing countries. A livelihood, according to Scoones (1998), comprises “the capabilities, assets (including both material and social resources) and activities required for a means of living” (p.5). To him, a livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while preventing the decline of the natural resource base.

The sustainable livelihoods approach began as a means to address poverty in developing countries and has been utilized extensively in Global South settings (see Mancusi-Materi, 2000; Rajbhandari, 2002). While poverty alleviation is essential within this sustainability discourse, the well-being and capabilities of people is prioritized over income growth as an end (Scoones, 1998). Slater and Yeudall (2015) identifies two key dimensions to achieving sustainable livelihoods: sustainability and equity. Under the sustainable livelihoods approach, Chambers and Conway (1992) maintain that sustainability is a function of how assets and capabilities are used, maintained, and enhanced to preserve livelihoods. Central to the definition of sustainable livelihoods is the ability of a livelihood to cope with and recover from stresses and shocks. Scoones (1998) argues that “those who are unable to cope (temporary adjustments in the face of change) or adapt (longer term shifts in livelihood strategies) are inevitably vulnerable and

unlikely to achieve sustainable livelihoods” (p. 6). In attempting to achieve sustainable livelihoods, there is the need to avoid “depleting stocks of natural resources to a level which results in an effectively permanent decline in the rate at which the natural resource base yields useful products or services for livelihoods” (p.7).

Equity on the other hand, refers to a “fair distribution of (a) capabilities (what a person is capable of doing and being); (b) assets (tangible resources such as food, money; and intangible resources such as knowledge and social networks); and (c) opportunities” (Slater & Yeudall, 2015, p. 3). This suggests that people can achieve greater equity in their livelihoods by acquiring assets such as land and adequate housing, in addition to developing their capabilities mostly through training and education, which in turn increases their opportunities. Furthermore, the external social, economic, and physical environments directly and indirectly affect people’s ability to acquire assets and develop capabilities.

The sustainable livelihood framework, according to Hinrichs (2010), is useful for describing how production and consumption activities in the food system intersect to create particular sustainability outcomes. Slater and Yeudall, (2015) maintain that the sustainable livelihoods approach provides the opportunity to examine the definitions, assumptions, and contexts behind the concept of food security and how to achieve it.

### **2.2.5 Food Sovereignty**

Proponents of food sovereignty (see Jarosz 2014; Menezes, 2001; Patel, 2009, Wald & Hill, 2016) argue that contemporary discourses of food security are inadequate for ensuring a just and sustainable economy of food, hence a shift towards a greater emphasis on food sovereignty. This call is based on the argument that contemporary food security is viewed as an important feature of neoliberal economic development through capitalist investment, growth and international trade. Patel (2009) maintains that these contemporary discourses of food security

avoided discussing the social control of the food system. Food sovereignty, Jarosz (2014) argues, is an alternative paradigm with strong sentiments against corporate-led globalization and with emphasis on local-level autonomous control over the food system.

Like the concept of food security, the definition of food sovereignty has evolved from 1996 when the concept was introduced by La Via Campesina. Agarwal (2014) asserts that at the time of its introduction, the concept was focused on developing capacity to achieving self-sufficiency and respecting the productive and cultural diversity of the food systems at the national level. By February 2007, the La Via Campesina modified their definition of the concept, defining it as:

The right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems. It puts those who produce, distribute and consume food at the heart of food systems and policies rather than the demands of markets and corporations. It defends the interests and inclusion of the next generation. It offers a strategy to resist and dismantle the current corporate trade and food regime, and directions for food, farming, pastoral and fisheries systems determined by local producers. Food sovereignty prioritizes local and national economies and markets and empowers peasant and family farmer-driven agriculture, artisanal fishing, pastoralist led grazing, and food production, distribution and consumption based on environmental, social and economic sustainability. Food sovereignty promotes transparent trade that guarantees just income to all peoples and the rights of consumers to control their food and nutrition. It ensures that the rights to use and manage our lands, territories, waters, seeds, livestock and biodiversity are in the hands of those of us who produce food. Food sovereignty implies new social relations free of oppression and inequality between men and women, peoples, racial groups, social classes and generations. (Via Campesina 2007, cited in Patel, 2009, p, 666)

As is evident from the evolution of the concept, the fundamental principles of food sovereignty demand that peasants and smallholder farmers have direct control over formulating food policies, and also incorporates issues of consumption and other rights (Wald & Hill, 2016). There is value in the concept because the 2007-08 global food crisis was a result of legal issues

which were at the heart of the global food system. Claeys and Lambek (2014, cited in Wald & Hill, 2016) argue that the legal issues relate to access to land, property rights over land, unequal trade agreements, and tensions between protecting farmers' human rights and intellectual property rights. Advocates of food sovereignty demand a switch from the existing food system, which is fossil fuel-based and largely focused on agro-export crops and biofuels, towards an alternative paradigm that encourages local/national food production by smallholder farmers based on local innovation, resources, and renewable energy. To Altieri et al. (2012), this implies improving access to seeds, land, water, credit, and markets, partly through the creation of supportive economic policies, market opportunities, financial incentives, and agro-ecological technologies.

Jarosz (2014) argues that the food sovereignty discourse tends to reflect Marxist views of the political economy and ecology, emphasizing the importance of power relations and the impact of capitalism on food production, human societies and the environment. Bernstein (2014) maintains that the discourse of food sovereignty focuses more on food production by placing emphasis on how food is being produced, by whom and within what governing policies. Wald and Hill (2016) argue that food sovereignty is a transformative and even revolutionary concept that is “politically charged, connecting issues of food production and consumption to wider social, economic and environmental struggles” (p. 209).

The notion of food sovereignty, with its calls for self-reliance at the national level, seems to negate international trade (Agarwal, 2014). However, Wald and Hill (2016) argue that newer definitions of the concept highlight the need to promote “the formulation of trade policies and practices that serve the rights of peoples to safe, healthy and ecologically sustainable production” (p. 209). It advocates for governance systems that give priority to local markets while preventing

or putting a stop to the negative impacts of international trade such as dumping of food in the global economy at prices below the cost of production.

The various criticisms leveled against the concept of food sovereignty (see Agarwal, 2014; Bernstein, 2014; Jarosz, 2014; Patel, 2009) enrich discussions over what food sovereignty entails, both theoretically and in practice, which can pay dividends in conceptualizing sustainable food systems. Food sovereignty is “a paradigm, a mix of practical policies, a movement and a utopian aspiration” (Edelman, 2014, p. 960). Valuable concepts and issues associated with the globalized food system fall under the purview of food sovereignty. Grey and Patel (2015) maintain that these include:

- ✓ Prioritizing local agricultural production in order to feed the people, access of peasants and landless people to land, water, seeds, and credit. Hence the need for land reforms, for fighting against GMOs (Genetically Modified Organisms), for free access to seeds, and for safeguarding water as a public good to be sustainably distributed;
- ✓ The right of farmers, peasants to produce food and the right of consumers to be able to decide what they consume, and how and by whom it is produced;
- ✓ The right of Countries to protect themselves from too low priced agricultural and food imports;
- ✓ Agricultural prices linked to production costs: they can be achieved if the Countries or Unions of States are entitled to impose taxes on excessively cheap imports, if they commit themselves in favor of a sustainable farm production, and if they control production on the inner market so as to avoid structural surpluses;
- ✓ The populations taking part in the agricultural policy choices;
- ✓ The recognition of women farmers’ rights, who play a major role in agricultural production and in food. (p. 433)

#### **2.2.6 Value-Chain approach**

The creation, operation and evolution of value chains offers one model for restructuring regional food systems that operate at a larger scale than direct marketing as they redistribute value along the chain to ensure economic, environmental and social benefits for the participants (Bloom & Hinrichs, 2010; Marsden, Banks & Bristow, 2000). Value chains refer to the



businesses involved in each stage of the supply chain right from the producer to the consumer. Unlike traditional supply chains, these business relationships focus on value-added products and value-based interactions, while ensuring fairness in the economic exchange (Bloom & Hinrichs, 2010). It is one promising way to shift the balance of power in a food system that tends to disadvantage small and medium scale producers. Marsden et al. (2000) assert that the value chain approach reduces the spatial distance and number of intermediaries between producers and consumers, a useful strategy in promoting rural development. They achieve this by redistributing value along the food chain (see also Renting, Marsden & Banks, 2003).

Value is added at different stages and by different actors participating in the chain. Trienekens (2011) maintains that the opportunities to add value depends on market characteristics and the technological capabilities of the actors. Typically, an agricultural value chain might include: farmer organization, farm production, input supply, post-harvest handling, processing, provision of technologies of production and handling, grading criteria and facilities, cooling and packing technologies, post-harvest local processing, industrial processing, storage, transport, etc. (Norton, 2014). In that regard, both on and off-farm employment opportunities are created towards rural development and poverty alleviation, hence the emergence of the approach in the early 2000s (Stoian et al., 2012).

Marsden et al. (2000) argue that for a highly agrarian economy, the approach “offers potential for shifting the production of food commodities out of their ‘industrial mode’ and to develop supply chains that can potentially ‘short-circuit’ the long, complex and rationally organized industrial chains within which a decreasing proportion of total added value in food production is captured by primary producers” (pp. 424-425). Value chains can play a role in local food system development that benefits a wide range of producers and consumers, and

effectively operates at regional levels. The model incorporates issues of scale and efficiency, which are crucial for addressing the problem of small margins in many agricultural production systems (Bloom & Hinrichs, 2010).

The key elements of value chains include ability to ensure price premiums that can promote economic viability for producers; commitment to the welfare of all participants which includes the fair distribution of profits; creating strategic partnerships (increases overall efficiency and adaptability); and the role of trust and shared governance. Increased efficiency and adaptability are accomplished, in part, through active coordination of the value chain, as well as information sharing and joint problem solving among participants (Bloom & Hinrichs, 2010, pp. 14-15). Treating each other as partners and recognizing mutual interdependence helps to enhance trust so that sensitive information can be used to coordinate the supply chain. The development of value chains must work towards helping participants upgrade their operations, become innovative, and ensure that win-win relationships are maintained (Stoian et al., 2012).

Whilst there is great value in this approach (see Stevenson & Pirog, 2008), Marsden et al (2000) argue that the degree to which such rural development initiatives can be developed and sustained, both over time and space, remains unclear. Stoian et al. (2012) assert that many value-chain initiatives treat poor rural households as a uniform group, neglecting the fact that both external factors, such as access to basic infrastructure and services, common pool resources, and social stability, as well as internal factors, such as asset endowments, interests, and power, ultimately determine the success of such development initiatives.

In summary, this section has examined the notion of sustainable food systems and explained the calls made to consider the concept as a viable way of achieving food security. The concept takes its roots in various sustainability discourses (sustainable development, sustainable

agriculture, sustainable livelihood, and sustainable transition), as well as concepts like food sovereignty and the value chain approach. These concepts are useful in providing insights into what it means to create sustainable food system. Taking insights from various concepts discussed in this section, the next section identifies the characteristics of ‘sustainable food systems’, presenting practical goals to be considered in terms of creating sustainable food systems.

## **2.3 CHARACTERISTICS OF ‘SUSTAINABLE FOOD SYSTEMS’**

Following Hinrichs’ (2010) assertion that paying attention to the shifting tides of sustainability discourse can inform and potentially strengthen the theory and practice of food systems, this section identifies the characteristics of sustainable food systems, and also presents practical goals to be considered in terms of creating sustainable food systems.

Kloppenborg et al. (2000) argue that sustainable food systems are “relational, proximate, diverse, ecologically sustainable, economically sustaining, just/ethical, knowledgeable/communicative, seasonal/temporal, healthful, participatory, culturally nourishing and sustainably regulated” (p.181). In keeping with this long list of characteristics, Hinrichs (2010) notes that scholars advancing sustainable food systems tend to reach for comprehensiveness in terms of identifying the attributes of the concept. In a more elaborate description, Feenstra (2002) argues that the attributes include the following:

More environmentally sound, more economically viable for a larger percentage of community members, and more socially, culturally and spiritually healthful. They tend to be more decentralized, and invite the democratic participation of community residents in their food systems. They encourage more direct and authentic connections between all parties in the food system, particularly between farmers and those who enjoy the fruits of their labor – consumers or eaters. They attempt to recognize, respect, and more adequately compensate the laborers we often take for granted – farmworkers, food service workers, and laborers in food processing facilities, for example. And they tend to be place-based, drawing on the unique attributes of a particular bioregion and its population to define and support themselves. (p.100)

While there is merit in considering these characterizations of sustainable food systems by various scholars as noted above, taking insights from various discourses of ‘sustainability’ and ‘systems’, as well as other relevant concepts (see Section 2.2) could help unearth more practical goals worthy of consideration when working towards creating sustainable food systems. The food systems of many developing nations like Ghana are gradually being reshaped by a growing push towards globalization and industrialization, which places value on biofuels and export crops, with yet unknown ecological, social and economic impacts and risks (Altieri et al., 2012). Therefore, the following measures present more practical ways of creating sustainable food systems in developing countries like Ghana, based on the assumption that the local economies are mostly agrarian in nature.

### **2.3.1 Achieving self-sufficiency through efficient local food production**

Developing countries need to strive for self-sufficiency in food production (assuming the nation is capable in terms of resource endowment such as arable land, and irrigation water) because food, as argued by Menezes (2001) and Jarosz (2014), can be used as a political and economic weapon. The only way to avoid the international “weaponization” of food is having control over food availability at the national level. In economic terms, being self-sufficient helps in stabilizing food prices, making food more easily accessible to the poor.

As noted by Altieri et al. (2012), approximately 80% of all farms in Africa are small and majority of these smallholder farmers are women with farm sizes below 2 ha, producing almost all root, tuber and plantain crops, and the majority of legumes and grains consumed in the region while practicing “low-resource” agriculture. To Agrawal (2014), most of these farmers are trapped in low productivity cycles. This is to say that there is room to achieve self-sufficiency through more efficient methods of food production. Therefore, self-sufficiency at the national

level is a must and can be achieved with increased productivity of smallholder farmers who are already producing a sizeable chunk of the food crops available locally.

### **2.3.2 High efficiency in food use**

A sustainable food system is one that prevents food losses and wastefulness through effective post-harvest storage measures. This is essential as efficiency of food usage is low across the globe (Tscharntke et al., 2012). Estimates suggest that globally, a third of harvested food is thrown away (Gustavsson et al., 2011). It is alarming to note that “food losses in industrialized countries are as high as in developing countries, but in developing countries, more than 40% of the food losses occur at post-harvest and processing levels, while in industrialized countries, more than 40% of the food losses occur at retail and consumer levels” (Gustavsson et al., 2011, p. 5). Improving post-harvest technologies and methods can help reduce food losses, which is essential for a sustainable food system, especially among smallholder farmers in the developing world (Tscharntke et al., 2012).

### **2.3.3 Giving priority to local markets and regulating international trade**

A sustainable food system is best developed through governance systems that give priority to local markets while preventing or putting a stop to the negative impacts of international trade such as dumping at prices below the cost of production in the global economy (Wald & Hill, 2016). Kloppenburg et al. (2000) argue that emphasis must be placed on locally grown food, regional trading associations, locally owned processing, and local control over politics and regulation of the local market system. Giving priority to local markets ensures consumer access to fresh, culturally appropriate and nutritious foods. International trade cannot be eliminated, nor would it be desirable to do so, given the ecological, climatic and other location specificities that limit the types of crop produced from one place to the other (Agarwal 2014). Trade is inevitable since self-sufficiency in all crops is impossible for a nation to achieve.

Nevertheless, there is the need to regulate the importation of various food items from overseas, limiting trade to only food deficit crops. Giving priority to local markets, while regulating international trade, prevents the situation where the circulation of foreign food commodities, such as rice or maize, reduces local prices, lowering the income of local producers and ultimately undermining domestic production (Trauger, 2014).

#### **2.3.4 Giving priority to smallholder farmers, especially women**

Access to resources is key to ensuring an efficient and effective production system. Almost 60% of the workforce of most developing countries remains in agriculture, and almost 50% of agricultural workers in African are smallholder women farmers, who are dependent on low yield, subsistence farming (Agarwal, 2014). Smallholder farmers rather than large-scale commercial farmers are the backbone of total food security (Tscharntke et al., 2012). These farmers have a central role to play in reviving agriculture and increasing its capacity to withstand the onslaughts of climate change. However, smallholder farmers, according to Agarwal (2014), face substantial constraints, including insecure rights to arable land, limited access to irrigation facilities, limited access to inputs such as fertilizers, technology, information on new agricultural practices and marketing infrastructure, and little access to formal credit.

Since “the ability to pursue livelihood strategies is dependent on the basic material and social, tangible and intangible assets that people have in their possession” (Scoones, 1998, p.7), giving priority to the needs of smallholder farmers improves their ability to cope with and recover from stresses and shocks which are likely to come their way in this era of climate change. Improved agricultural extension services, and access to arable lands, improved seeds, irrigation facilities, for example, can go a long way to help establish sustainable food systems in most developing countries.

### **2.3.5 Ensuring ecologically sustainable agricultural practices**

Avoiding natural resource depletion to a level which results in an effectively permanent decline in the rate at which the resource base yields useful products or services for livelihoods is very important given the extent of reliance upon these resources (Scoones, 1998). A sustainable food system is one in which the health of the environment is sustained and enhanced for use by all generations in perpetuity. In that vein, Kloppenburg et al. (2000) argue that sustainable farming methods should entail working to replenish soil and other resources through composting, recycling, and the use of animal nutrients. Methods of farming must ensure resource regeneration and be non-exploitative of the environment. According to Tscharntke et al. (2012), adopting eco-efficient and environmentally friendly management with a focus on more diversified cropping systems can greatly improve productivity and promote the resilience of the ecosystem. Agriculture is highly dependent on ecosystem services which include biological pest control, maintenance of soil structure and fertility, nutrient cycling and hydrological services (Power, 2010). However, given that agricultural practices can be a source of disservice to the ecosystem, there is need for ecologically friendly farming systems.

Since the main concern for sustainable agriculture is making farm production practices more energy efficient and protective of natural resources (Hinrichs, 2010), having such a food production system is beneficial for its participants and society as a whole (Hoffman, 2007). Undeniably, the issue of non-chemical farming is most desirable for both environmental concerns and the health of consumers (Agarwal 2014), hence the need to encourage and support ecologically sustainable agricultural practices.

### **2.3.6 Continuous learning and research geared towards sustainable transition**

The problems with the current globalized food system warrant a move towards new systems of food production, consumption and governance (Hinrichs, 2014). Sustainability transitions involve persistent and multi-dimensional transformation processes through which established systems evolve towards more sustainable modes of production and consumption (Markard et al., 2012). Given that transitions do not occur overnight and due to the never-ending nature of knowledge and technological innovations, there is the need for constant research and learning geared towards finding more sustainable methods and practices. A sustainable food system is one which is constantly evolving towards more sustainable means of food production, distribution and consumption, as new discoveries/innovations are continuously sought-after, just as sustainability in itself is a process rather than an endpoint (Hinrichs, 2010). Easy access to information and innovations is a vital component of a sustainable food system (Kloppenburg et al., 2000).

### **2.3.7 Enhancing livelihood opportunities/strategies with effective value-chains**

A sustainable food system is one in which local food production is profitable, and capable of supporting a good standard of living for on-farm, and off-farm workers (Kloppenburg et al., 2000). Local food production is capable of creating lots of livelihood opportunities right from the farm gate, through transportation to processing, and then distribution to the final consumer. As it is not possible to have everyone producing the food they consume, having livelihood opportunities for off-farm workers along the food chain is very important, as it has an impact on one's chances of accessing food. Simply put, "a successful agricultural intensification strategy pursued by one person may provide an opportunity for another person's agricultural processing or petty trading livelihood diversification strategy" (Scoones, 1998, p. 10). Hence the



impacts of one person's livelihood activities on others, both now and in the future, is very important and requires careful consideration. Having a sustainable livelihood ensures that people have the purchasing power to access food. Therefore, a sustainable food system must strive to create the conditions for alternative and associative economies, helping develop ways for people to have access to food from the market in perpetuity (Kloppenburger et al., 2000).

### **2.3.8 Treating 'food as a human rights issue'**

A sustainable food system is one that ensures the rights of people and nations to control their own food systems, including markets, production models, food cultures and environments (Davila & Dyball, 2015). In terms of treating food as a human rights issue, emphasis is placed on the need to fight against Genetically Modified Organisms (GMOs), preserving biodiversity, ensuring free access to seeds, and the preservation of water bodies as a public good to be sustainably distributed. To Grey and Patel (2015), priority must be given to local production in order to safeguard access to food by all. A sustainable food system must be set up to protect the right of farmers to produce food and the right of consumers to be able to decide what they consume, how and by whom it is produced. A sustainable food system, Kloppenburger et al., (2000) argue, must ensure the direct participation of people in the operation and governance of the various components of the food system as part of their right. This is to say that the population must take part in the agricultural policy making process (Grey & Patel, 2015). Whereas the industrialized and highly globalized food system is driven by a competitive market system leading to the commodification of food (Hoffman, 2007), a sustainable food system strives for the preservation of nutritional culture, ensuring that traditions are not lost (Menezes, 2001). A sustainable food system must work to de-commodify food, causing the transformation of the political economic foundations of the corporate, globalized food system (Trauger, 2014).

To conclude, this section has presented the characteristics of sustainable food systems as identified by various scholars. In addition, more practical ways of creating sustainable food systems have been suggested, taking insights from various discourses of sustainability and systems, as well as other concepts relevant within the context of a developing nation like Ghana. Sustainable food systems, according to Hinrichs (2010), are unlikely to be achieved from one blue ribbon recipe, which is followed to the latter, but instead, multiple recipes need to be located, tested, adapted and shared. Having a sustainable food system requires continuous reflection and tinkering of methods or measures. The next section highlights both conceptual and practical challenges of creating sustainable food system.

## **2.4 CHALLENGES OF CREATING SUSTAINABLE FOOD SYSTEMS**

This section highlights both conceptual and practical challenges of creating sustainable food systems, mostly emanating from the contested nature of the concepts of sustainability as well as unresolved issues regarding the systems approach.

Adopting a systems approach is useful as it avoids the linearity of food chains and creates a bigger picture than food networks. However, Hinrichs (2010) argues that the systems approach has two challenges. These challenges seem related, with the first being concerned with setting the boundaries of a system, while the second challenge is termed as the blinders problem. To Hinrichs, the issue of boundaries poses some challenges in terms of assessing sustainable food systems. While a system defined more expansively could result in difficulties of monitoring and assessment because of the multiple and overlapping relationships of influence, a smaller, more comprehensible system runs the risk of missing critical influences and impacts. The blinders problem, according to Hinrichs (2010), emerges when setting boundaries, as there is a tendency

to exclude or leave out particular social actors and groups within the system when trying to move the food system in a more sustainable direction.

The sustainability discourse also presents some tensions that affect the conceptualization and the creation of sustainable food systems. According to Hinrichs (2010), these tensions can be seen in the emergent and provisional nature of knowledge, the inevitability of trade-offs, and the significance of power and politics. The emergent and provisional nature of knowledge presents a challenge in the sense that sustainability is an emergent concept just as nature is full of emergent properties. In that light, being sustainable requires careful anticipation and adaptation to changes ahead (ibid). Sustainability is a process rather than a prescription (Kirschenmann, 2008). Given that sustainability is always emergent, subject to change because of the growing recognition of different kinds of knowledge, the issue of trade-offs emerges. The notion of trade-off, according to Hinrichs (2010), means making room for some adverse effects in order to ensure that other valued gains of sustainability are met. Across the three dimensions/pillars of sustainability, the value that is placed on one dimension could lead to a weakening of the other, and that represents a major challenge in the conceptualization and creation of sustainable food systems. Implementing sustainable food systems is therefore a difficult task, given the tensions and contestations around the knowledge necessary to embark on productive discussions about trade-offs (ibid).

The question of who decides the most important dimension or value, as well as the trade-offs in a sustainable food system, directly brings to bear the crucial importance of power and politics. Since values and tenets inform the different approaches to sustainability, the choice of a certain criteria over the other has political implications (Hinrichs, 2010). The importance of power and politics presents a challenge in calls for food to be treated as a human rights issue.

The issue of power is well manifested in the globalized, industrialized food system, where the right to food and farming is under the control of multinational corporations and individuals who have control of the entire process from seed to shelf (Hoffman, 2007). It is in this context that Agarwal (2014), among others, have called for the democratization of the food system, placing the interest of the many at heart. However, the power of “rights-talk” implies a particular burden on a specified entity, probably the state, and “the multivalent hierarchies of power and control that exist within the world food system” (Patel, 2009, p. 668), hence creating sustainable food systems definitely involves a shift in power from one sovereign entity (corporations) to another (state) (Agarwal, 2014).

In a nutshell, the emergent nature of knowledge, the issue of sustainability trade-offs, and the importance of power and politics presents challenges in contextualizing sustainable food systems. By adopting the systems approach, challenges emerge from setting the boundaries of the system and the kind of blinders that are considered or successfully removed. To Hinrichs (2010), the fact that it is very difficult to agree on what result matters most for sustainable food systems and the absence of good data measuring tools of sustainability is a major challenge. Although overcoming these challenges might seem to be a Herculean task, experiencing the challenges themselves also reiterates the need for continuous learning and research, geared towards finding more sustainable ways of doing things in order to achieve desired results.

## **2.6 CONCLUSION**

This chapter has explained the emergent notion of ‘sustainable food systems’ and has justified the calls made to consider the concept as a viable way of achieving food security. The chapter showed that the concept takes its roots in various sustainability discourses -- sustainable development, sustainable agriculture, sustainable livelihood, and sustainable transition --, as well

as concepts like food sovereignty and the value chain approach. These concepts are useful in providing insights into what it means to create sustainable food system. The characteristics of sustainable food systems as identified by various scholars were also presented. As a result of the comprehensiveness of such characterization, which seemed vague and all-encompassing, more practical goals or ways of creating sustainable food systems were suggested taking insights from various discourses of sustainability and systems, as well as other relevant concepts, suggested within the context of a mostly agrarian, developing nation like Ghana. Suggested measures include treating food as a human rights issue; giving priority to local markets and regulating international trade; enhancing livelihood opportunities/strategies with effective value-chains; high efficiency in food use; continuous learning and research geared toward sustainable transition; ensuring ecologically sustainable agricultural practices; giving priority to smallholder farmers, especially women; and achieving self-sufficiency through efficient local food production. However, the emergent nature of knowledge, the issues of sustainability tradeoffs, and the importance of power and politics presents a challenge in creating sustainable food systems.

Since sustainability is not an endpoint but rather a process, there is no ironclad or fixed definition for sustainable food systems. Hinrichs (2010) argues that sustainability may look different, depending on how one sets the boundaries of the system of interest and what kind of blinders are considered or successfully removed. Success in conceptualizing and creating sustainable food systems will also depend on more research and continued reflection. There is value in working towards achieving sustainable food systems as the concept provides a clear vision and pathway for policy makers, academics and people to rethink, challenge and change the existing food systems, which has failed many (Blay-Palmer and Koc, 2010).

In summary, this chapter has answered the first research question of the study by presenting the characteristics of sustainable food systems. The characteristics of sustainable food systems identified is the first step towards achieving the thesis objective of assessing the efforts made by international development agencies to improve food security in northern Ghana. The next chapter addresses the second research question of the thesis: “How do food systems in northern Ghana compare to sustainable food systems, and what are the impediments to achieving sustainable food systems in northern Ghana?”. Using the characteristics of sustainable food systems as the assessment criteria, the food system in northern Ghana is assessed in order to identify the impediments to achieving sustainable food systems in the region.

## **CHAPTER THREE: IMPEDIMENTS TO ACHIEVING SUSTAINABLE FOOD SYSTEMS IN NORTHERN GHANA**

### **3.1 INTRODUCTION**

This chapter addresses the second research question of the thesis: How do food systems in northern Ghana compare to sustainable food systems, and what are the impediments to achieving sustainable food systems in northern Ghana?

In order to address this research question, the chapter begins with a discussion of development disparities in Ghana. There are wide disparities between northern Ghana (Upper East, Upper West and Northern region) and the southern regions of the country, therefore the section assesses the reasons for the region's underdevelopment. I show that households constantly deal with seasonal challenges of accessing food due to northern Ghana's unfavorable food production conditions. The second section examines the state of food insecurity in northern Ghana. The section assesses the level of food insecurity in the region and the changes that have occurred over time. I show that the prevalence of food insecurity in region has increased over time, implying that Ghana's poor economic performance in recent times has worsened the situation in the region. Having described the level of food insecurity in northern Ghana, the third section provides an assessment of the food system in the region. The state of northern Ghana's food system is compared to the characteristics of sustainable food systems. I argue that the food system in the region fails to measure up to the characteristics of sustainable food systems. Achieving self-sufficiency and efficient use of food in the region has been unattainable because local food producers are trapped in low productivity cycles and record high post-harvest losses. The final section examines the impediments to sustainable food systems in northern Ghana. Natural/geographical factors, cultural and economic factors, and institutional inefficiencies of the government are identified as the three categories of impediments to sustainable food systems in

northern Ghana. These categories of impediments constrain local food production and access to food from the market. The chapter concludes that the high level of deprivation in northern Ghana makes achieving sustainable food systems a Herculean task, especially due to the likelihood of locals placing more value on the economic dimension of sustainability, leading them to compromise the environmental and social dimension.

### **3.2 DEVELOPMENT DISPARITY IN GHANA**

Development disparities, emanating from unequal distribution of benefits and losses, has led to the polarization of wealth in the hands of few and the marginalization of many groups (Ashaver, 2013). This is evident in the wide development gap between the poor countries of the Global South and the rich countries of the North (Moon, 2007). Such inequalities in development also exist within states (Ashaver, 2013). The development pattern in Ghana is characterized by a north-south divide in which the north lags far behind the south. There are wide disparities between northern Ghana (Upper East, Upper West and Northern region) and the southern regions in the country (Al-Hassan & Diao, 2007). Aside from the three regions in northern Ghana, the Central and Volta regions are also identified as less developed regions in the country (GSS, 2013). However, the case of northern Ghana is seen to be peculiar due to its long history of deprivation. Kuwornu et al. (2013) assert that poverty is the most important determinant of food insecurity in Ghana, limiting investment in local food production and access to food. Regularly cited reasons for the underdevelopment of northern Ghana include history, unfavorable climate and agricultural production conditions, and post-independence political neglect (Al-Hassan & Diao, 2007; ODI & CEPA, 2005). The following sub-sections explain these frequently cited reasons given for the underdevelopment of the region.



### **3.2.1 History**

The underdevelopment of northern Ghana seems to originate from the long history of skewed relations between the north and south. Shepherd et al. (2006) argue that “the suspicion that northerners have had of southerners, and the perceptions southerners have of northerners, have their roots in pre-colonial relationships, whereby the Ashanti’s were seen as ‘black imperialists’, and exploited northern regions through the slave trade” (p. 12). The North-South relations were later worsened by colonial policies, which made northern Ghana peripheral to the south in terms of economics and politics, by actively promoting labour migration and preventing investment in the north (Al-Hassan & Diao, 2007). The colonial focus on the south can also be attributed to the presence of valuable export commodities such as gold, cocoa, timber and other resources. Ghana was divided into functional territories where the Gold Coast colony played the role of an administrative region for the British colonizers, the Ashanti colony was the resource production zone with cocoa and gold, while the Northern territory provided labour for the production or extraction of these natural resources (see Figure 3.1). Therefore, the historical explanation for the underdevelopment of northern Ghana is grounded in the pre-colonial and colonial construction of northern Ghana as a periphery, providing labour to the cocoa farms and the mining sector in the south (ODI & CEPA, 2005).

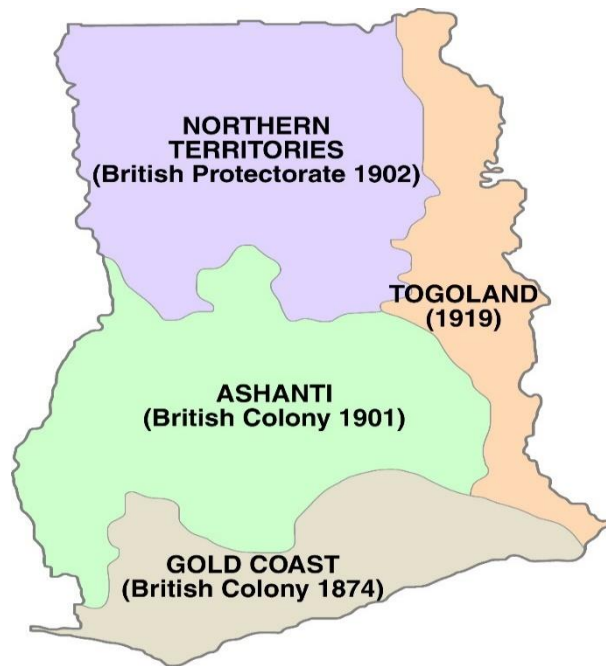


Figure 3.1: Colonial Map of Ghana  
Source: Adopted and modified from Exploring Africa, n.d.

### 3.2.2 Post-independence political neglect

The underdevelopment of northern Ghana is also partly due to the fact that the region has never been a centre for economic activity in the nation. Notable investments in the region were seen under the import substitution industrialization strategy pursued by the immediate post-independence government (1957-1966), and especially, the military regime of National Redemption Council- NRC (1972-1979) (Al-Hassan & Diao, 2007; ODI & CEPA, 2005). These important initiatives in northern Ghana were seen through capital investments, development of education, infrastructure, agricultural production and processing. The NRC regime, Al-Hassan and Diao (2007) argue, was recognized for the expansion of cotton and rice industry subsidies. According to Shepard et al. (2006), the NRC regime promoted the development of state-subsidized large scale capitalist agriculture and related processing operations in the north. For instance, the cotton industry was developed among smallholders, and the agricultural sector

received massive investment. However, this strategy failed to yield the expected result. It is argued that import-substitution policies and the supporting subsidy policies failed because by focusing on large scale elite farming of rice and cotton, they neglected the smallholder farming system, ultimately creating inequalities within the region and impeding sustainability (Al-Hassan & Diao, 2007).

Shepherd et al. (2006) further argue that policies implemented from the late 1980s through the 1990s had limited impacts on the development of northern Ghana. Since the late 1980s, the region has witnessed an “extension of the electricity grid to the north, the establishment of the University for Development Studies (with campuses spread throughout the three northern regions), rehabilitation and development of physical and social infrastructure, and considerable project aid from official donor agencies and international NGOs” (Al-Hassan & Diao, 2007, p. 1). However, these policies were not introduced to create regional balance in Ghana’s development, but rather to compensate the northerners (Shepherd et al., 2006). Structural adjustment policies and the neo-liberal economic model led to the privatization of the rice industry, while rice was subject to import liberalization and substantial imports of US food aid, resulting in the loss of a market for local rice which had gained some reputation in the 1970s (ibid).

Additionally, there is the argument that the underdevelopment of northern Ghana is partly a result of inadequate distribution of public investment by southern dominated governments (ODI & CEPA, 2005). This argument seems valid given that out of the 12 governments in Ghana since independence, it is only two that had a northerner as president; Dr. Hilla Liman’s regime (1971-1981) and John Dramani Mahama’s regime (2012-2016) (GhanaWeb, n.d.). In other words, the neglect of northern Ghana in terms of development can be seen as a product of the

dominance of southerners ruling the nation since independence. Looking at the political history of Ghana, it seems fair to argue that northern politicians have failed to push adequately for development of northern Ghana (Shepherd et al., 2006). It is worth noting, however, that the Volta region is still considered one of the deprived regions in the country (see GSS, 2013) despite the 20-year reign of Flight Lieutenant Jerry John Rawlings (1980-2000), who comes from that region. This is to say that there are limits to this “ruler-region of origin argument” when considering development disparities in Ghana.

### **3.2.3 Unfavorable climate and agricultural production conditions**

Until recently, agriculture was the largest employer of the total workforce, accounting for over 50 percent (50.6%), but the services sector, with a share of 43%, has now dislodged the agricultural sector (now 42%) as the largest employer in Ghana (MoFA, 2013). In the case of northern Ghana, agriculture is more dominant, with over 75% of the population engaged in the sector (WFP, 2012). There are few options in terms of alternative livelihood activities. Almost half of the households (46%) in northern Ghana acquire their income from crop cultivation while close to a third (29%) rely on agro-pastoralism (ibid). Together, these two groups represent 75% of the population, underlining the importance of agriculture in sustaining the livelihoods of households in northern Ghana. The share of household incomes derived from non-farm activities remains significantly lower in northern Ghana than the rest of the country, and is lowest in the most food insecure region, the Upper East region (ODI & CEPA, 2005).

However, for a region with such a high reliance on the agricultural sector, one reason for its underdevelopment is the unfavorable climate and agricultural production conditions. The conditions for agricultural production in many parts of northern Ghana are poor, especially when compared to the south (Al-Hassan & Diao, 2007). In terms of vegetation, Guinea and Sudan Savannah make up the northern half of Ghana (see figure 3.2), which is primarily grassland with

patches of economically valuable, drought-resistant trees (Wood, 2013). Crop production in northern Ghana is limited to food crops including maize, millet, rice, sorghum, cassava, yam, sweet potato, tomato, pepper, cowpea, soybean, groundnut, bambara, cashew and sheanuts (MoFA, 2011). High income rewarding cash crops like cocoa, rubber, citrus, coconut and oil palm are produced in the high forest, deciduous forest and transitional zones, all in southern Ghana.

Considering the heavy reliance on rain-fed agriculture in Ghana, crop production tends to fluctuate with varying periods of precipitation scarcity, sufficiency and surplus (MoFA, 2007). The case of northern Ghana is much worse than what is experienced in the south as rainfall levels are much lower (see Figure 3.3), therefore crop yields are quite low.



Figure 3.2: Agro-ecological zones in Ghana  
Source: RESPTA, 2008.

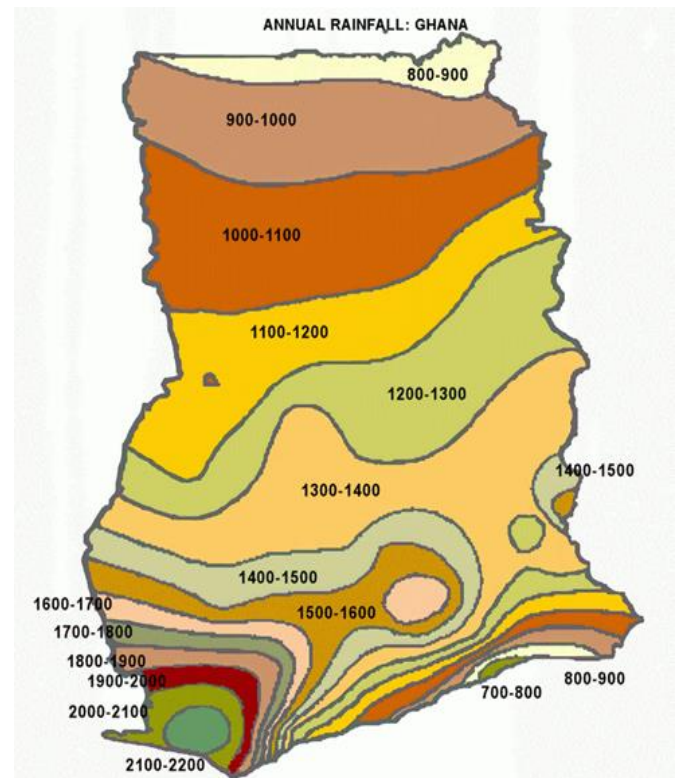


Figure 3.3: Annual rainfall map of Ghana  
Source: Heart Language, 2013.

Comparatively, the Brong Ahafo region, despite its overwhelmingly agrarian economic structure, is seen to be performing better than the three northern regions in terms of reducing poverty. A far higher proportion of households in the Brong Ahafo region sell their crops for income, unlike farmers in northern Ghana, whose crop yields barely sustain household consumption annually (ODI & CEPA, 2005). While the south is able to rely on two rainfall seasons, the north has only one rainfall season, which starts from May to September each year (Wood, 2013). This suggests that the agricultural underdevelopment of northern Ghana is partly affected by natural/geographical factors.

As a result of the wide disparities between northern Ghana (Upper East, Upper West and Northern region) and the southern regions in the country (Al-Hassan & Diao, 2007), 70% of the poor at the national level can be found in northern Ghana (WFP, 2012). The high levels of poverty in northern Ghana leads to the situation where households tend to constantly deal with seasonal challenges of accessing food, hence migration has been established as an important coping strategy (Rademacher-Schulz, 2014). Migration is seen as a reaction to severe poverty, or a chosen livelihood strategy to improve the wealth of a household (Awumbila, 2014).

In summary, this section has outlined the regional development disparities in Ghana and explained the reasons for the disparity. Reasons given for the underdevelopment of northern Ghana have included history, post-independence political neglect, and unfavorable climate and agricultural production conditions (Al-Hassan & Diao, 2007; ODI & CEPA, 2005). Northern Ghana's unfavorable climatic and agricultural production conditions means that households constantly deal with seasonal challenges of accessing food. In that vein, the next section examines the state of food insecurity in northern Ghana. This is relevant to the assessment of

food system in northern Ghana and the impediments to achieving sustainable food systems in the region.

### **3.3 FOOD INSECURITY IN NORTHERN GHANA**

Aside from the regional disparities in Ghana's development, the World Food Programme (2015b) argue that recurrent natural disasters, and the high food and fuel price crisis increases the vulnerability of communities to food insecurity and malnutrition. Ghana's economy has been unable to sustain its growth momentum since 2011, as the growth rate achieved in 2015 was 3.5%, a substantial decline from the 14% growth rate recorded in 2011 (WFP, 2016a). Between 2011 and 2016, Ghana's economy experienced high interest and inflation rates, depreciating currency and chronic power outages which stifled productivity in the industrial and service sectors (leading to closure of factories and laying off of many workers). In addition, there were hikes in utility tariffs by 59.2% for electricity and 67.2% for water, as at December 2015, which increased pressure on the purchasing power of households, reducing access to food for poor and vulnerable households across the country (ibid).

As poverty is most persistent in northern Ghana with over 45% of the population living on less than USD 1.25 per day, food security remains a major challenge<sup>1</sup> (Kuwornu et al., 2013; WFP, 2015b). The results of the recent "*Emergency Food Security and Market Assessment in Ghana*"<sup>2</sup> (EFSMA) conducted by the World Food Programme shows an increase in the prevalence of food insecurity in two of the three northern regions (WFP, 2016a). Estimates suggest an increase in food insecurity from 9% (WFP, 2012) to 14% (WFP, 2016a) in the

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<sup>1</sup> The 2009 nationwide Comprehensive Food Security and Vulnerability Analysis (CFSVA) showed that food insecurity is concentrated in the poorest regions of the country which are also most prone to adverse weather conditions, such as floods and droughts. Out of the 1.2 million people to have very limited access to sufficient and nutritious food for an active and healthy life in Ghana, 34% were found in the Upper West region, 15% in the Upper East region and 10% in the Northern region (WFP, 2009).

<sup>2</sup> Data collection was carried out between February and early March 2016.

Northern Region, and an increase from 16% (WFP, 2012) to 18% (WFP, 2016a) in the Upper West Region. The Upper East Region remains the most food insecure region, although the proportion of food insecure households decreased from 28% (WFP, 2012) to 20.7% (WFP, 2016a).<sup>3</sup>

The level of food insecurity in northern Ghana is highest in the Talensi- Nabdam District and lowest in the Builsa district, both in the Upper East Region. The top ten most food insecure districts are Talensi-Nabdam (40.0%), Lambussie-Karni (38.5%), Central Gonja (37.5%), Garu-Tempane (36.4%), Savelugu-Nanton (35.2%), Bongo (30.0%), Jirapa (29.5%), Nanumba North (28.6%), Wa West (27.1%) and Sawla- Tuna- Kalba (24.5%) (WFP, 2016a). Three of the 10 most food insecure districts are in the Upper East Region, three in the Upper West region and four in the Northern Region.

The 2012 “*Comprehensive Food Security Vulnerability Analysis*” (CFSVA) also recorded high levels of food insecurity in the Wa West (42.1%), Central Gonja (39.2%) and Talensi Nabdam (38.6%) districts (WFP, 2012). With the exception of the Wa West district, where a reduction of food insecurity was recorded, no significant progress has been made in Central Gonja and the Talensi-Nabdam districts. The persistent high levels of food insecurity in those districts suggest that the situation has become chronic in nature (WFP, 2016a). Figure 3.4 shows levels of food insecurity in 2012 and 2016 for the top ten (10) food insecure districts in northern Ghana.

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<sup>3</sup> The state of household food insecurity is assessed by calculating the food consumption score (FCS) and creating a wealth index. The classification of households is based on a combination of these indicators. The FCS combines diet diversity, frequency of consumption (the number of days each food group is consumed), and the relative nutritional importance of different food groups. The wealth index is created based on asset ownership and housing conditions (WFP, 2012, p.9).



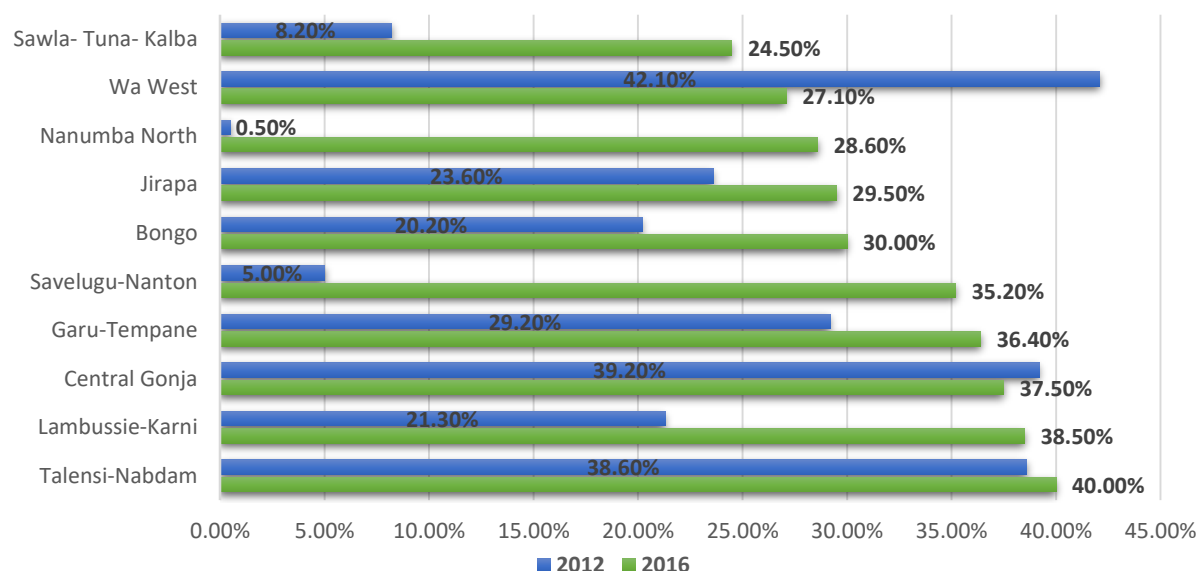


Figure 3.4: Top ten food insecure districts in 2016 and their status as at 2012  
Source: Author's construct using data from WFP's CFSVA 2012 and EFSMA 2016.

As evident from Figure 3.4, the Nanumba North district in the Northern region was mostly food secure (99.5%) in the 2012 assessment. In other words, less than 1 % of the sampled households were food insecure (WFP, 2012). Therefore, the high levels of food insecurity recorded in the recent assessment (28.6%) is worrisome (WFP, 2016a). Two possible explanation can be given for the drastic change of fortunes in the Nanumba North district. The first explanation is simply a case of severe food insecurity, due to rapid increase in the vulnerability of households to shocks and changes in food access between May 2012 and February 2016. The other possible explanation is a methodological one. The 2012 assessment sampled 635 households in the district (WFP, 2012), while the recent assessment sampled 105 households in the district (WFP, 2016a). It is stated that the sample design for the recent assessment took into consideration the prevalence of food insecurity in each district based on the 2012 CFSVA. Since the district recorded less than 1% food insecurity in 2012 (WFP, 2012), it is possible that the recently recorded high levels of food insecurity could have been higher or lower

if the district was identified as a highly food insecure district in 2012. This is because the sample size for the recent assessment would have changed in accordance to the level of food insecurity recorded in 2012. A similar argument can be made with regards to the Savelugu-Nanton district, also in the Northern region, which recorded a 30% increase in the share of food insecure household between 2012 and 2016<sup>4</sup>.

It is also worth stating that the recent assessment was conducted in February, a period when households are generally expected to have good stocks of food, while the 2012 CFSVA was conducted at the start of the lean season in May. There is a greater risk of many more households becoming food insecure during the lean season (WFP, 2016a). In other words, many households or district with currently low prevalence of food insecurity could move into high levels of food insecurity during the lean season due to changes in their access to food around that time of the year.

Similar to the finding of the 2012 assessment, female headed households were identified to be more food insecure than male headed households. The 2016 assessment established the fact that about 21.4% of female headed households are food insecure compared to 15.9% of their male-headed counterparts (WFP, 2016a). Food insecurity among female-headed households is caused by limited access to land and agricultural inputs, as control over essential natural resources rests with their male counterparts. Unequal access to useful resources such as land, financial resources, mechanization and extension services affect the ability of female-headed household to produce enough and gain adequate access to food (ibid). In addition, lack of skills and education often prevents them from finding good income-earning opportunities (WFP, 2012). The fact that women in northern Ghana do not have the same opportunities to earn income as men makes gender an important dimension of poverty (MoFA, 2007). Women in

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<sup>4</sup> Due to these methodological issues, the figures may not be trustworthy.

northern Ghana are mostly self-employed, engaging in non-agricultural self-employment activities and more likely to be engaged in unpaid family work than men. The FAO (2012) argues that very few women engage in paid labour, and when opportunities exist, they are disadvantaged, as men are five times more likely to take part in wage-employment than women. Due to gender inequalities in accessing resources and the fact that majority of female heads of households in northern Ghana are widows (WFP, 2012), female-headed households are about five times as likely to be poor compared to the male-headed households (Cancian & Reed, 2009). Making the case about how females are most vulnerable to food insecurity in northern Ghana, one academic interviewed during the fieldwork argued the following:

Because they have only one rainy season, usually, they produce in one season unlike here in the south where we have two. So their food is not able to take them throughout the year so there are months when they have food inadequacy and when we have that situation, the men will migrate but the women cannot move because of their children and so this group will be more vulnerable to food insecurity. For the men, when it is the off-farming season, they move in search of jobs. (Academic 1, August, 2016)

This quotation suggests that the most prominent coping strategy of seasonal migration in search of income earning opportunities (see Section 3.2) is not possible for female household heads compared to their male counterparts, due to their traditional roles of childbearing and home management.

In terms of consumption, food insecure households in northern Ghana tend to consume high amounts of cereals and tubers, with limited consumption of fruits, meat, and other food items. Food insecure households, according to the World Food Programme (2016a), consume lots of cereals and tubers, and enjoy limited consumption of fruits, meat/fish and pulses, resulting in an increase in the occurrence of diet-deficient health risk in those households. On the other hand, food secure households have better consumption of meat and fish, pulses and fruits. Although agriculture is the main source of livelihood in northern Ghana (Al-Hassan & Poulton,

2009), market purchase is the main source of food for households, with more than 55% relying on this source to meet their food needs (WFP, 2016a). In spite of the fact that the assessment was conducted at a time of the year when most households were generally expected to have food stocks, less than 40% of households relied on own-produced grains in the region (ibid). Figure 3.5 presents the analysis of the main sources of food for households on a regional basis.

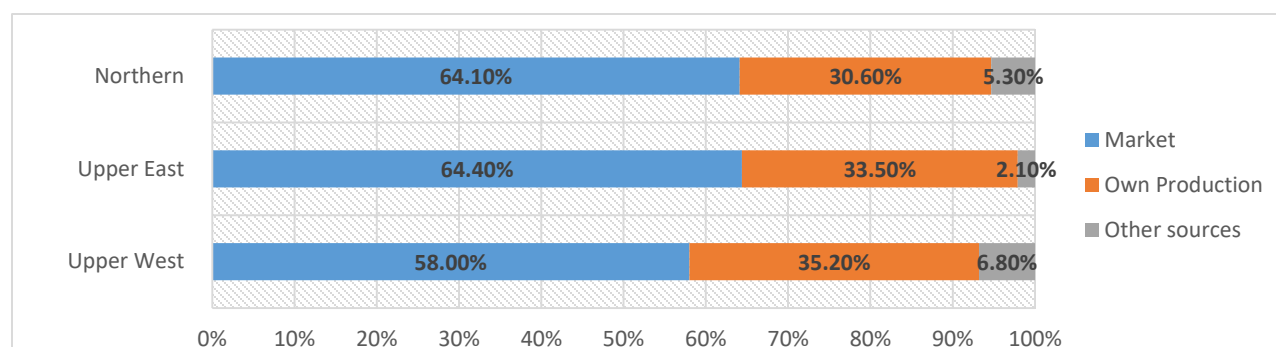


Figure 3.5: Sources of food  
Source: EFSMA- WFP 2016a.

Other sources of food identified include fishing, gathering, hunting, labour or items exchanged for food, begging for food, assistance from family/friends, and assistance from government and non-governmental organizations. The high dependency on market as a source of food implies that many households could be highly vulnerable to market shocks, hence the increasing price of food commodities in the country increases pressure on the purchasing power of those households, and reduces food access for the very poor (WFP, 2016a). The heavy reliance on the market to satisfy household food needs has been partly attributed to the high level of youth outmigration from farming areas into the urban centers, as aging farmers are not energetic enough to increase agricultural production significantly (Amanor, 2008).

In summary, this section has assessed the prevalence of food insecurity in northern Ghana. The current outlook of the situation was discussed in comparison to food insecurity

figures from 2012. It was worrying to note that higher levels of food insecurity were recorded, with the possibility of the situation worsening during the lean season (reliability of figures is questionable). This suggests that the situation in northern Ghana has become chronic over the years (between 2012 and 2016). Ghana's poor economic performance over that period has worsened food insecurity in northern Ghana. In that regard, the challenges to accessing food might not be limited to northern Ghana as poor economic performance has stifled productivity in the industrial and service sectors, leading to closure of factories and laying off of many workers in southern Ghana (WFP, 2016a). Having established the level of food insecurity in northern Ghana, the next section provides an assessment of the food system in the region. The state of northern Ghana's food system is compared to the characteristics of sustainable food systems established in Chapter Two, all geared towards identifying the impediments to sustainable food systems in the region.

### **3.4 ASSESSMENT OF FOOD SYSTEMS IN NORTHERN GHANA**

Northern Ghana's deprived state and high prevalence of food insecurity renders the food system in the region unsustainable. This section explains the unsustainable state of the food system in the region by providing a comparison to the characteristics of sustainable food systems identified in Chapter Two in the following paragraphs.

First of all, the food system in northern Ghana falls short in terms of achieving self-sufficiency through efficient local food production (see Section 2.3.1). Due to the natural/geographical conditions of the region, local food production is limited to only food crops which are unable to provide significant economic returns to producers compared to the cash/export crops available in southern Ghana (see Section 3.2). While the region is capable of growing the five most important staple crops (rice, maize, cassava, yam and cowpea), the gaps

between actual crop yields and achievable yields under best farming practices range from about 37% for maize, 25% for cowpea, 55% for cassava, 36% for yam, and 42% for rice (MoFA, 2010). These statistics reveal the inefficiencies in local food production, as local food producers are trapped in low productivity cycles (Agrawal, 2014). In that regard, self-sufficiency has been unattainable in northern Ghana despite the dominance of agriculture as the main source of livelihood in the region.

In terms of efficiency in food use, a sustainable food system is one that prevents food losses and wastefulness through effective post-harvest storage measures (see Section 2.3.2). However, there is low efficiency in food use in northern Ghana and the country as a whole. In 2009, estimates suggested that about 35% of maize and 34% of cassava produced in Ghana were lost along their respective value chains (MoFA, 2010). Recent estimates show a reduction of post-harvest losses in cultivated maize from 35% to 18% (Bruce, 2016). Typically, northern Ghana recorded most of the losses with the Northern Region recording the highest amount of post-harvest losses in cultivated maize in the entire country (20,411 tons- 37%), followed by Upper East region (13,000 tons- 23.6%) while the Upper West region recorded a low of 778 tons (1.4%) of post-harvest losses in cultivated maize. As local food producers are trapped in low productivity cycles (Agrawal, 2014), less efficiency in food use, mostly due to poor post-harvest techniques is worrisome and continues to render the food system unsustainable.

Giving priority to local markets and regulating international trade (see Section 2.3.3), Trauger (2014) argues, prevents the circulation of foreign food commodities, which reduces the income of local producers and ultimately undermines domestic production. However, the seasonal variability in local production and the high levels of inefficiencies in food use in northern Ghana leaves local markets flooded with imported food commodities from neighboring

Burkina Faso and other places. In addition, local markets in northern Ghana have poor market infrastructure with weak integration between local, districts and regional markets. With the region being the least urbanized in the country (Northern- 30.3%, Upper East- 21% & Upper West- 16.3%) (GSS, 2013), poor rural road infrastructure limits the effective distribution of food and lowers the income of local producers (MoFA, 2007; 2010). In that regard, the food system in northern Ghana is unsustainable due to its inability to prioritize local markets and regulate the negative effect of imported food on the local market.

Smallholder farmers rather than large-scale commercial farmers are the backbone of the local economy in northern Ghana, as they represent 62% of farming households in the region (Tscharntke et al., 2012; WFP, 2012). While a sustainable food system gives priority to smallholder farmers (see Section 2.3.4), the failure of the government to provide the needed support to this category of farmers in the region renders the food system unsustainable. Approximately 87% of female-headed households in northern Ghana are smallholders (farming five acres or less) compared with 60% of male-headed households (WFP, 2012) and they have limited access to land for farming, irrigation facilities, farming inputs, extension services, and microcredit credit (Agarwal, 2014; Anang et al., 2015; WFP, 2012). While these constraints to production are not limited to female smallholder farmers, the patriarchal system in northern Ghana puts them at a disadvantaged position compared to their male counterparts (see Doss & Morris, 2000; Morris, Tripp & Dankyi, 1999). Culturally defined reproductive roles of women in northern Ghana tend to interfere with their productive roles. In that regard, public extension services tend to bypass female smallholder farmers because they are not visible as farmers (MoFA, 2007). Extension planning, delivery and content fails to address their needs due to inadequate gender mainstreaming (MoFA, 2010).

While a sustainable food system ensures ecologically sustainable agricultural practices (see Section 2.3.5), there is little regard for ecologically sound practices in northern Ghana due to greater emphasis on increasing local production. The bush fallow system is mostly utilized in the region and is highly dependent on whether the farmer can afford to let land remain uncultivated long enough to replenish soil fertility after several years of cropping (Woods, 2013). Barry et al. (2005) argue that the fallow period has been decreasing from 15 to less than five years as population density and land pressure increases, which causes a decrease in soil quality and a significant reduction in yield. Improper use of agro-chemicals and inadequate understanding of the environmental issues related to agricultural practices endangers the sustainability of the productive resource base (MoFA, 2010). Besides the lack of an agricultural land-use policy, agricultural extension services fail to incorporate sustainable land and water management training for farmers (MoFA, 2007).

Again, a sustainable food system is one that is constantly evolving towards more sustainable means of food production, distribution and consumption (see Section 2.3.6), as new discoveries/innovations are continuously sought-after (Hinrichs, 2010). However, Ghana's food and agricultural sector is characterized by inadequate funding and commitment to research, limited application of biotechnology, and low uptake of research findings by stakeholders (MoFA, 2007). There is limited adoption of innovation in northern Ghana since households lack the capital to afford sustainably improved ways of production. Morris et al. (1999) argue that cultural factors, particularly the patrilineal societies of the north, directly affect technology adoption as women's access to resources (land, capital, ability to mobilize labour) in the region is highly constrained compared to the matrilineal societies in the south. Most agricultural research, innovations and extension services are designed for male users, failing to cater for



females who dominate the sector in the region (MoFA, 2010). Therefore, the food system in northern Ghana is unsustainable due to limited research tailored towards improving sustainability, the lack of sensitivity of innovations and extension services to the needs of women and the low rate of innovation adoptions due to cultural factors and the high level of deprivation in the region.

The local economy in northern Ghana is mostly agrarian as the region has the highest proportion of agricultural households in the country. According to the 2010 population census, the Upper East region (83.7%) has the highest proportion of agricultural households followed by the Upper West region (77.1%) and the Northern region (75.5%) (GSS, 2013). The proportion of agricultural households are highest in the rural areas with 93.7% in Upper East region, 89.9% in the Northern region and 88.6% in the Upper West region (ibid). These statistics highlight the importance of agriculture to livelihoods in northern Ghana, but also reveal the lack of off-farm livelihood opportunities in the region. The food system's ability to diversifying livelihood activities is necessary since income from agriculture for many households is declining while expenditure is on the rise (Yaro, 2006). However, livelihood diversification portfolios in northern Ghana are limited to diversified crop cultivation, livestock rearing, dry season gardening, petty trading and especially out-migrant remittances (Aasglenang & Bonye, 2013). Over the years, migrant remittances have been considered vital to the socio-economic development of households in northern Ghana with the region recording the highest amount of out-migration towards the urban communities, mineral deposits and cocoa growing areas in the southern parts of the country (Tandoh-Offin & Awuse, 2013). Incomes from non-farm sources, especially during the lean season, are necessary to offset the shortfalls in the agricultural sector. However, opportunities to practice such activities in northern Ghana are few, with considerably

low earnings, failing to provide the needed security to households (Yaro, 2006). Therefore, an indication that the food system in northern Ghana is unsustainable due to its poor contribution to livelihood security.

While sustainable food systems ensure the direct participation of people in the operation and governance of the various components of the food system as part of their right (Kloppenburger et al., 2000), the food system in northern Ghana falls short of ensuring that access to food is treated as a human rights issue (see Section 2.3.8). Access to productive resources such as land, capital and agricultural inputs are limited for women in the region due to patriarchy (see Morris et al., 1999). Often, poor and marginalized groups are unaware of their right to food and productive resources. The social, economic and cultural development of marginalized groups in northern Ghana, Yaro (2004) argues, is impossible without empowerment through active participation in key decision-making processes. Beside the traditional constraints to ensuring that access to food and productive resources is treated as a human rights issue in the region, national policies (FASDEP II and METASIP) lack a human rights component (see MoFA, 2007; 2010). The national policy is not set up to protect the right of farmers and consumers to produce food, and to decide what they want to consume, respectively. Quaye (2007) asserts that the right to food is a constitutional human rights issue that embodies access to food producing resources such as seeds, land, and irrigation facilities. However, national policy fails to place emphasis on the need to ensure free access to seeds and the preservation of water bodies and biodiversity as public assets that needs to be accessed and distributed sustainably.

In summary, this section has compared the food system in northern Ghana to the characteristics of sustainable food systems. It has been established that the food system in the region is unsustainable due to its failure to measure up to the characteristics of sustainable food

systems. Northern Ghana's deprived state significantly contributes to the unsustainable state of the food system. There is inadequate support to smallholder farmers, poor market infrastructure, while women's access to productive resources are highly constrained by the patriarchal societies in the region. Building on the assessment of food systems in northern Ghana, the next section examines the impediments to establishing sustainable food systems in the region.

### **3.5 IMPEDIMENTS TO SUSTAINABLE FOOD SYSTEMS IN NORTHERN GHANA**

At the household level, food security is achieved through a balance between availability of and access to sufficient food (Rukuni, 2002). In the case of an agrarian economy like that of Ghana, and more specifically that of northern Ghana where over 60% of the populace depend on agriculture for their source of livelihood in one way or the other (Al-Hassan & Diao, 2007), ensuring efficient and effective production levels is of grave importance. However, Owusu et al. (2011) assert that food security policies need to go beyond just production measures. The food systems perspective places emphasis on putting measures in place that will enhance the ability of farming households to participate in non-farm work that enables them to access food when it is not available from their farms. According to Quaye (2008), the agricultural sector is central to development and poverty alleviation in the region, as the sector has "high potential to create jobs, to increase returns to assets that the poor possess -- their labor and in some cases their land -- and to push down the price of food staples, which is crucial when so many of the poor are net buyers of food" (p. 335). The prevalence of food insecurity in northern Ghana has been associated with severe difficulties in producing food for home consumption and in accessing food on the market.

Building on the assessment of food systems in northern Ghana (see Section 3.4) while reflecting on the development disparities in the country (see Section 3.2), the high levels of food

insecurity in northern Ghana (see Section 3.3) and the characteristics of sustainable food systems (see Chapter Two), this section examines the impediments to achieving sustainable food systems in northern Ghana. In the following sub-sections, three factors that serve as impediments to producing food for home consumption and to accessing food on the market in northern Ghana are discussed.

### **3.5.1 Natural/Geographical Impediment**

As established in Section 3.2, northern Ghana's deprived state is associated with the unfavorable climatic conditions for food production. The major challenges to achieving sustainable food systems in both rural and urban areas are essentially linked to the inability of households to produce adequate quantities of food to meet their needs due to impoverished soils and unfavorable weather conditions (WFP, 2016a). This serves as an impediment to achieving self-sufficiency through local production. Since the livelihood of people in northern Ghana is mostly dependent on agriculture with very few options for livelihood diversification, the amount of household income derived from non-agricultural activities remain significantly low in the region (ODI & CEPA, 2005; WFP, 2012). During the fieldwork, an NGO representative, explaining the food production challenges in northern Ghana that emerge from natural factors, argued;

Rainfall amount is one and rainfall distribution is another... Not enough rainfall means that you can experience crop failure. Even when the rains start well, it can just shut off and then you have a crop failure, and that happens quite often. That is one. Two, northern Ghana soils are poor. The soil types that we have out there, a lot of sandy loam soils. Sandy loam soils by their texture will not hold as much nutrients because of low organic matter in the soil so low soil fertility. It means that you need to use more organic matter like fertilizer, like manure in the north. Three, annual bush fire. Bush fire destroying vegetation, and destroying any organic matter that should be incorporated into the soil. So it is a combination of rainfall and soil factors. We also have the unimodal rainfall distribution and so you have, now in many places, it's about five, if you are lucky, six

months of rain and the rest is about six or seven months of no rain. (NGO Rep 4, August 2016)

This quotation suggests that natural/geographical factors inhibit food production levels in the region as established in section 3.2. In that vein, food production in the region, depending on climatic conditions, is characterized by varying periods of production scarcity and sufficiency (MoFA, 2007).

In order to overcome some of the food production challenges associated with natural factors, Wood (2013) argues that irrigation farming is more needed in northern Ghana than southern Ghana because the region enjoys only one rainy season. Over-reliance on rain-fed agriculture is a contributing factor to the food production challenges in the region and in the country as a whole. Making the case about the lack of irrigation in the northern region, another NGO representative stated:

In the face of the changing climate, it is unwise for us to continue depending on rainfall. There are a number of water bodies that we can access to irrigate fields and produce all year round so if we are not investing in irrigation, and in Ghana, just about 3% of our total arable lands are under irrigation and those are mostly commercial farmers who are probably doing export. When it comes to the peasant farmers or the small-holder farmers, it's very negligible so we need to invest in irrigation. (NGO Rep 3, August 2016)

It is evident from the interview transcript that the lack of irrigation, especially among smallholder farmers, impedes the ability to ensure efficiency in local food production. Due to the high cost of developing irrigation facilities, food production among smallholder farmers remains inefficient.

In terms of prospects for irrigation in northern Ghana, the Volta River, identified as the chief river system of Ghana, provides an avenue for year round food production. The two main upper branches of the river, the Black and White Volta, rise in the open plateaus of Burkina Faso and unite in the middle of the Northern Region (Volta River, 2016). The White Volta is also

joined by the Red Volta in the Upper East region (see Figure 3.6). The presence of these rivers mean that providing irrigation facilities along the water bodies in these regions can aid farmers improve and maintain crop production, eventually helping to improve efficiency in production geared towards achieving self-sufficiency.



Figure 3.6: Map of the Volta Basin

Source: Adopted and modified from Sebaly, 2006.

Additionally, groundwater provides another option for irrigation farming in Ghana. Although groundwater development has relatively low cost and does not require expensive infrastructure, it is still underutilized in Ghana and for that matter, most of Africa. Groundwater extraction is successful when a region lies within a river basin, therefore adopting groundwater

irrigation is promising in northern Ghana since the 42% of the Volta River Basin which lies in Ghana effectively covers the three northern regions (see Figure 3.6) (Anayah and Kaluarachchi, 2009; Berry et al., 2006).

Since the Volta basin covers 70.1% of Ghana's total land area, groundwater can be exploited as a viable option in terms of accessing fresh water for both domestic and agricultural purposes for the covered regions. Speaking on the low adoption of groundwater irrigation in Ghana as a whole, an NGO representative argued:

In Ghana, in general, groundwater is accessed basically for domestic use; boreholes and wells for domestic use. There are only few places where groundwater is done, yes, like Bugri gardens in the Bawku area where wells have been dug for the production of onions... So groundwater has been least exploited for agricultural purposes, least exploited... Comparing Ghana to north eastern South Africa where we visited, an area where the rainfall is below 700mm, that is below the rainfall amount in Bolgatanga (Upper East Region), that is where we saw banana plantation, sugar cane plantation and sugar mills. And when you look around, you don't see any river, big river. No! Groundwater is what they use. What reason do we have? I believe that if private individuals are able to buy drilling rigs, what money hasn't the government got to do it. (NGO Rep 4, August 2016)

In the recent assessment of the World Food Programme (2016a), it was established that 44.2% of food insecure households cited adverse weather conditions in the year 2015 as one of the reasons for a decrease in crop yield, and eventually, reduced household incomes. This confirms claims that farmers in the region are vulnerable to crop production deficits due to the heavy reliance on rain-fed agriculture (MoFA, 2007). The heavy dependence on agricultural cultivation in the region, Yaro (2013) argues, implies that food production losses induced by changing climatic conditions create insurmountable challenges to efficient local production. The natural/geographical conditions in northern Ghana inhibit the region's chances of achieving self-sufficiency and food system sustainability.

### 3.5.2 Cultural and economic impediments

Aside from natural factors, northern Ghana's deprived state (see Section 3.2), coupled with cultural practices in the region, serves as an impediment to the sustainability of its food system. Cultural factors come into play when examining the continued depletion of soil quality in northern Ghana. For an agrarian economy like that of northern Ghana, ensuring sustainable land management practices will safeguard agricultural productivity and environmental resilience (MoFA, 2007). However, the long history of bad farming practices, like bush burning, continue to pose a threat to agricultural lands in Ghana (MoFA, 2010). Soil quality in northern Ghana is quite poor compared to that of the south and the state of agricultural lands is worsened by the cultural practice of bush burning. While calling for attitudinal change in northern Ghana, a representative of an NGO argued the following:

We need to change attitudes. If every year, they are burning the whole lands, they are burning away organic matter. Organic matter has the capacity to improve upon the soil structure and the water holding capacity so even if you have little rains coming and the organic matter were left on the field, at least, the little will still be maintained. But when we hit October/ November, people start burning till the rains come again. So we keep on destroying our lands and if that is not checked, things are going to get worse and worse. (NGO Rep 3, August 2016)

There have been lots of debates about the impact of bush burning, or the practice of slash and burn, on soil nutrients as well as the physical properties and biota. The use of fire in agriculture is seen as a land management tool as the heat generated during burning can change physical, chemical and biological soil properties. Thomaz et al. (2014) argue that the length of the fallow period is a key factor that affects the sustainability of slash-and-burn agricultural systems and crop yields. As seen in the case of northern Ghana, short fallow periods, usually spanning less than a year, do not allow the nutrient cycle to be restored to pre-burning conditions, or soil porosity, aggregate stability, and infiltration characteristics to be restored. In



order words, it is unproductive for farmers to practice bush burning in northern Ghana if a reasonable fallow period is not observed, as Thomaz et al. (2014) assert that the fallow period plays a key role in both increasing sustainability and reducing soil degradation in such a system of farming. In that regard, the practice of annual bush burning in northern Ghana serves as an impediment to ensuring ecologically sustainable agricultural practices.

Improving crop production in unfavorable soil conditions requires the use of organic and inorganic fertilizers. According to Khor (2006), local farmers incur high production cost due to increasing demand for the use of agricultural inputs and the high cost of acquiring inputs which are mostly imported. The prices of agricultural inputs are influenced by global factors and actors, and present a major challenge for poor/subsistence farmers in northern Ghana. Approximately 16% of households surveyed by the World Food Programme (2016a) stated that the cultivation of their most important revenue-generating crops was constrained by the lack of fertilizer /pesticides use. Taking a staple crop like maize as an example, it is argued that fertilizer application is a necessity in northern Ghana:

...if you don't apply fertilizer to maize, you are only getting about, in fact, less than one ton per hectare. One ton is 1000 kg, that is 10 bags. Now, divided by 2.5 to get an acre and that is just too small to even feed the household and some households are even getting less than 500kg. So input is a must. There is no compromise on that and that is where the investment has to be. (NGO Rep 3, August 2016)

In that light, low crop productivity in northern Ghana can be attributed to the low use of inputs, and high levels of poverty in the region worsens the possibility of improving the situation. Women are disadvantaged due to their restricted access to productive resources as a result of patriarchy (see Section 3.4). Although the use of agricultural inputs is a necessity, Morris et al. (1999) argue that the patrilineal societies of the north directly affect adoption as

women's access to productive resources in the region is highly constrained. In other words, the use of inputs among women is inhibited by cultural and economic factors.

Commenting on the food production challenges in relation to climate change and the need for farmers to adapt, an academic stated:

Right now, we should be thinking about shocks, specific shocks that lead to localized food insecurity issues... We have regions whereby in a particular year, rainfall failed them. So you don't expect non-farm incomes to all of a sudden absolve that, and you can't expect that people are not flexible to move away from all that, from their traditional activity into unknown activities. It takes years to adjust, two or three years for a migrant to actually achieve a level that we can say that a migrant is able to meet the food needs and requirements for both themselves and their families. What can they do about these climatic shocks? They just have to adapt. There are limits to adaptation but different kinds of adaptation.... And all adaptations work on other determinants and poverty is one of them. The poorer you are, the lesser your ability to adapt. The richer, the more you can adapt. So, you are thinking about changing to crops that could easily yield more. For instance, rainfall is not reliable so which crop do farmers want to move to. Now they decide that we want to have some onions, because you need only an acre of onions to feed your family the whole year compared to ten acres of maize. You know the investment you need to put in it. There is irrigation, land preparation, agricultural inputs, it might even involve bulldozers because the flatter the ground the better. Now who is able to do this? Only the rich! You can't get the poor farmer to use the sophisticated machinery and methods. (Academic 2, August 2016)

Considering the issues raised in the above interview transcript, it is obvious that poverty is a key determinant in the food insecurity issues prevalent in northern Ghana. High levels of poverty in the region, a product of the region's underdevelopment, increase vulnerability to food insecurity as it directly correlates with an individual's access to resources and coping mechanisms (Adger, 1999). The economic situation of locals in the region has a significant impact on adapting to climatic shocks that render the food system unsustainable.

### 3.5.3 Institutional Inefficiencies

Inefficiency in the operations of state institutions is the third factor that serves as an impediment to food system sustainability in northern Ghana. Touted as having the potential to be the bread basket of the nation (Jeffrey, 2009), northern Ghana has a major role to play in the realization of the nation's goal of becoming self-sufficient in its food security crops (maize, rice, cowpea, cassava, and yam). Improving productivity, especially among smallholder farmers, is important but there seems to be limited commitment from the state in terms of realizing this objective. Policy declarations to increase investment in the agricultural sector have not been adhered to, and the situation in the sector has hardly changed over time. It is difficult to tell if government annual expenditure allocation of at least 10% of the national budget to the sector (see MoFA, 2007; 2010) is yielding the expected results. Various stakeholders cited the lack of investment as one of the main challenges of the sector. The following quotations are what two development NGO representatives had to say about how realistic the dream of being self-sufficient is:

Right now, when you check the statistics, Ghana is about 51% self-sufficient when it comes to rice production for instance, and it has taken sometime, not just 4 years or some period to be able to achieve that. If you ask me whether self-sufficiency is attainable, I will say “yes” and “no”. Yes, if there is an enabling environment. If the government will implement the right policies with the views of the smallholder farmer in mind... At the field level, there is the need for district assemblies, I am talking about local government services to put in the necessary support for smallholder farmers to achieve their potential. So “no” because some of these issues are not really being adhered to and for that matter, there may be a slim possibility to achieving it. But the government can do that with the right enabling environment. (NGO Rep 1, July 2016)

It is suggested in the above interview transcript that self-sufficiency is attainable if the government creates the right enabling environment- an optimistic perspective. However, the next quotation calls the self-sufficiency goal a mirage:

If we are using the old methods to try to achieve 2020 vision, then I think we will be dreaming. That is if we are going to continue to depend on rain-fed agriculture, totally rain-fed. I will say Ghana agriculture is just about between 2% to 5% irrigation. So if we are thinking becoming totally food secure by 2020, 4 years away, and we are depending totally on rain-fed, we are not looking at soil fertility issues, we are saying next to nothing about the annual bush fires in the north, we are not making any use of naturally occurring water bodies for irrigation, we are not making any inputs to accessing groundwater, I think that will be a joke or just a dream. We need to do more in these areas to ensure food security in the future otherwise we will keep on importing. If a country depends on the imported food, that country may be food secure but how will I put it, in terms of security nationally, that country is insecure. Because food can be used as a weapon... If a country wants to be nationally secure, then it has to address food security issues first by being self-sufficient. Not being dependent. I mean in all the things the country can produce with the resources, I mean the God given resources must be utilized. (NGO Rep 4, August 2016)

Being self-sufficient as a nation is a matter of national security, an important point raised in the above quotation. The lack of investment and commitment towards achieving self-sufficiency serves as an impediment to achieving sustainable food systems in northern Ghana. The government has failed to prioritize the needs of smallholder farmers, especially women, who are the backbone of the local economy in northern Ghana (WFP, 2012). As the world continues to move towards a more globalized system, Quaye et al. (2010) argue that an agrarian economy that has local food production capacity but decides to depend on imports for its food security faces multiple-risk factors including price volatility, trade conditionality and political instability.

The secondary purpose of food production is to utilize it as an item of trade (Quaye, 2007). The potential for agricultural trade is limited throughout Ghana by poor infrastructure (such as roads, markets and storage facilities) hence the ability of local producers to sell and store production surpluses is hindered (WFP, 2012). In the case of northern Ghana, poor infrastructure and market access are important factors constraining the growth of the sector in the region (MoFA, 2007), serving as an impediment to efficient use of food in the local food system.

The high levels of post-harvest losses in the region (see Bruce, 2016) are attributed to the lack of storage facilities, which forces farmers to sell immediately after harvest, a time when prices are low, and to re-purchase or depend on the market for their household food supply during the lean season (WFP, 2012). The dependence of local farmers on the market for their food supply during the lean season makes the findings of the recent assessment of the World Food Programme disturbing, as it was established that more than 50% of locals depend on the market for their food needs during a season of plenty (see Section 3.3) (WFP, 2016a). The food storage challenges of local farmers in northern Ghana begs the question of whether food security is more dependent on access to food rather than production (Yaro, 2013). In a discussion about storage challenges with an academic, he argued the following:

During years of bumper harvest, you don't necessarily have to eat all your produce within 12 months but the logic in Africa is that you have to finish within 12 months and then wait for the next year's harvest which is ridiculous, so the issue of storage is a big challenge. Because only storage can stabilize food prices. And that is why in the developed world, you can walk to any shop anytime and when you buy your 1kg of maize bale, it's always the same price. If it goes up, only by a few cents. Even within 3 years the price is the same. Here, it goes up and it goes down. So it means that you can be food secure for 6 months and food insecure for 3 months. Simply because prices have gone up due to shortage, or prices have gone down due to abundance. So markets and storage are very important. So when we often talk about market, maybe that's why we have not solved our problem. Because we've been talking about the wrong things, market, when we should be talking about storage. If you have storage, then you definitely don't have a problem with market. This is because, at least, you would be able to maintain productive price that is reasonable, prices a little bit above production cost. But if you don't have storage you would sell below your production cost; and illiterate farmers don't know what production cost is. Whatever price they get, they are happy with it. And then that means that they are limited the next year in their production. (Academic 2, August 2016)

As evident from above, tackling food storage is key to reducing price volatility and seasonal food insecurity challenges. Tackling food storage in northern Ghana and the nation as a whole will be vital to ensuring efficient use of food, and prioritizing local markets. At the

individual level, farmers lack storage facilities that will enable them to store their produce, forcing them to sell at prices far below their production cost due to fears of not making any sales when the crops go bad. At the national level, the National Buffer Stock Food Company (NAFCO) was established in 2010 by the Ministry (MoFA) to manage government's emergency food security initiatives and to protect farmers against losses (Baafi, 2016). The company was mandated to mop up excess produce from all farmers in order to reduce post-harvest losses or food spoilage due to poor storage, which will in effect protect the income of farmers while facilitating the export of excess stock. However, the establishment of NAFCO has not yielded the expected results. Speaking about the implications of food storage and prices, an NGO representative argued;

This year, many people are not going into soybean because they produced last year and the prices for this year are low. So they are not going into it. Once they are not going into it, next year, the price of soybean will shoot-up and maize will go down- cobweb cycle. Then their interest in maize will go down again. So every year, we go through that cycle. NAFCO, which was supposed to mobilize excess produce in the system, store it and release them into the market when there is shortage. If it was working well, then they could stabilize the price, irrespective of the production levels. (NGO Rep 3, August 2016)

NAFCO has been tagged as a drain on national coffers, a non-profitable venture which struggles to break-even, hence the recent decision to wean the company off government support (Baafi, 2016). Closely tied to the storage and price challenges is the competition local producers encounter on the market. Trade liberalization policies have led to the influx of foreign products on the local market. This suggest that food storage challenges and the import of foreign products serve as an impediment to protecting local producer/markets while regulating international trade. Taking the Ghana local rice industry as an example, Quaye (2007) argue that smallholder farmers in Ghana have to compete with subsidized exports from industrialized countries as

policies have opened up the local market. Commenting on the effect of open trade on local farmers, an academic argued the following:

It is the influx which is actually making our farmers suffer because food that is produced locally is becoming expensive and so the farmer has to put in more effort but then the market forces will play down his effort. He probably will not get a reward for the extra effort placed in the production and that we have had so many instances where people produce and food are bought at a very low price because of the influx that we have. For that, it is not just northern Ghana, even here [Accra], we feel it. Things that you produce locally are becoming more expensive than what is imported into the market. So the market is flooded with foreign products but is it flooded with the kind of things that will give us the energy, the nutrients that we need? (Academic 1, August 2016)

Consistently, the quality of imported products like rice is perceived to be superior and has prices comparable to the local rice. This has led to the situation where local farmers continue to struggle and become uncompetitive in their own local market (Quaye et al., 2010). The taste for foreign food in Ghana led to President Mahama appealing to Ghanaians to change their unbridled taste for foreign goods and switch to made in Ghana goods (GNA, 2014). Developing taste for local foods puts money in local economies, as Quaye (2007) argues that a lot of consumers have been disconnected from locally produced healthy foods. Regarding the lack of quality in local produce, an NGO representative argued:

In terms of consumption, the main issue has to do with taste, okay, and also branding. You know, awareness creation with regards to the nutritional benefits of our locally produced rice. For example, if you talk about the brown rice, it's very nutritious but most people are not aware of it... There is still more room for improvement when it comes to the taste and that begins from seed selection, you know, the cultivation practices. I am talking about GAPs- the Good Agronomic Practices. So how the farmer goes about this entire GAP can impact the taste and quality of the rice. It doesn't end there, the branding, awareness creation, and then the government's support to the industry. You know, people may argue that bringing in the right tax regimes, reducing the number of imports, you know, yes, exactly, not totally but gradually until we are self-sufficient. So it's mainly dependent on the taste and quality, as well as the awareness creation. Ghanaians like long grain perfume rice but unfortunately, most of our local rice, you see them containing stones and all that, you know, people don't want to buy. It is because of our processing; they are not so good. (NGO Rep 1, July 2016)

Locally produced foods are poorly positioned to compete with imported substitutes due to poor grading and standardization of products (MoFA, 2007). The poor standards of made in Ghana products leads to product rejection on both local and international market, making it difficult to prioritize local market/produces and to regulate international trade. However, the fact that imported foods are no longer cheap as global food prices continue to rise creates an avenue for local producers to compete (Quaye et al., 2010). An academic stated:

The story of cheap goods is mainly the story of the 1990's. Today, you can't talk about cheap foods. There are only few windows that you have such dumping occurring today; it is not widespread. And even the subsidized products coming from farmers abroad are still expensive and as a result it makes the local farmer able to also compete to some extent. But then, that simply means that if we had the full cost of European farm products, then it would make our farmers more competitive on our markets. (Academic 2, August 2016)

As suggested in the above, imported foods have become more expensive, hence consumers in developing countries like Ghana, dependent on food imports, are negatively affected, driving people who lack the purchasing power into food insecurity (FAO, 2008). Local producers stand to benefit from the fact that imported foods are no longer cheap, creating an avenue for them to compete on the market if they are able to measure up to the standards of imported products. Besides the poor standards of made in Ghana products, local producers have to battle the issue of acquired taste for foreign products among locals. In the case of northern Ghana, the high prevalence of poverty among farmers is essentially because income earnings in the sector are generally low for the staple crops mostly produced in the region (MoFA, 2007). They have limited purchasing power to acquire food from the market, hence the high prevalence of food insecurity in the region. Since there are very few income earning opportunities in the region beside agriculture (WFP, 2012), and high levels of illiteracy (see GSS, 2013), enhancing livelihood opportunities/strategies with effective value-chains is highly constrained.



Local farmers struggle to improve the quality of their products due to limited access to extension services that will get them acquainted with good agronomic practices and improved seeds. Well-developed value chains can be very useful to improving product quality, which can in turn increase the competitiveness of local producers on both domestic and international markets. However, the agricultural sector in northern Ghana is noted for its inadequate attention to value chain development, as evidenced by insufficient grading and standardization of most agricultural commodities, and low levels of product development (MoFA, 2007). It is believed that improving productivity along the value chain will contribute to poverty reduction, creating livelihood opportunities along the chain (see Mitchell et al., 2009). Commenting on the importance of value chain development, an NGO representative argued the following:

The bedrock of the survival of any value chain is volumes that are emanating from the production end. It is the volumes of whatever produce, that is moving along the chain that gets value added at each point in the chain. And at each point in the chain where somebody works on it and adds value to it, that person makes a living out of it, then it moves on to the next point. So if at the starting point, the volume is so low, and it gets consumed easily, there is little to move along the chain. You find that the processing of the tomato, you've heard of the Pwalugu tomato factory died in the 70's and they have tried to resurrect it but it never happened. What's the reason? For the processing of any agricultural produce, for sustainable processing, the supply of the produce must always exceed the local demand. Substantially exceed it beyond the fresh consumption. So if we're talking of tomatoes, and the little we produce, the factory has to struggle with market women who have come to buy, that factory will not survive... The volume of production is low, yield per acre is low, so all these things will contribute to inadequate supply, and therefore there is little left for processing... At the production base, productivity per unit area of land or per unit must be high by using the best methods available and then the total volumes produced must exceed the local demand for consumption. Then the excess is what will go into processing. So without working at the production end, creating jobs along the chain will be a mirage. (NGO Rep 4, August 2016)

It is evident from the interview transcript that developing value chains can be very useful in diversifying livelihoods. However, it is important that the right assessments are carried out in

order to make such developments sustainable. As the respondent stressed the need to place emphasis on the production end of the chain, it becomes easy to understand why factories like Northern Star Tomato Processing Factory at Pwalugu, Meat Processing factory at Bolgatanga, Fruit Juice Company Ltd at Wa and Rice Processing Factory at Zuarungu (Boateng, 2015), all in northern Ghana, were unsustainable and ineffective in the bid to reduce underdevelopment and poverty in the region. The failure of these factories foregrounds the need for careful research and assessment to safeguard their sustainability. To date, the food system in northern Ghana is poorly positioned to create livelihood opportunities along value-chains.

There have been calls to revamp these factories, but such efforts need to target an increase in the productivity of local producers in order to ensure that the factories will not struggle for their raw materials. Revamping the industries can go a long way to reduce post-harvest losses in the region and the country as a whole. However, there is the need to ensure year round production in order to guarantee sustained operations in the factories and livelihood security for all actors on the chain. In that regard, developing value chains requires careful conceptualization, analysis and interventions; otherwise, they may be ineffective in creating livelihood opportunities and reducing poverty (Stoian et al., 2012). Commenting on the role of government in developing value chains, an academic had the following insight:

The whole ministry, MOFA, is about value chain, even though they are sitting in their offices. They are expecting the chain to be linked from here [Accra] to Paga [Upper East region]. So depending on the nature of the value chain, it could be very useful or it could be disastrously useless. Value chains could be useful, where production costs of farmers are met, where they are learners of a useful technology, where they are becoming more quality oriented... You know, the nature of the value chain is important. We can't just say that value chain is bad... You can't impose a value chain unto a system that market is not functioning. Have you heard of a market falling from heaven? Markets are created. The value chains are often talked about without the market linkage, and that is where the problem is. You must create the conditions for people to be able to produce to satisfy the market: the quality and the quantity, and that includes difficulties such as land tenure

arrangement, labour relations, infrastructure and contracts or agreements and also awareness and rights. Do the small scale farmers have awareness of even their rights? Do they have the muscle to fight multinationals? Those in the chain who can decide that the chain should break at any point in time and of course it is about the nature of what is being produced in a particular chain... So we should look at different shades of value chains, different manifestations of the market, different levels of risks when thinking about value chains. (Academic 2, August 2016)

While the above quotation stresses the need for careful assessment of different levels of risk when developing value chains, it also highlights the uninspiring efforts of the sector Ministry to promote their development. The government's failure to develop market linkages that will enhance livelihood opportunities along value chains in northern Ghana is an impediment to achieving food systems sustainability in the region.

In conclusion, this section has examined the impediments to achieving sustainable food systems in northern Ghana. The section analyzed the challenges of food production in the region as well as market-related issues, identifying three categories of impediments. The first impediment was the natural factors which are closely tied to unfavorable weather conditions in the region, negatively affecting local food production and the region's potential to achieve self-sufficiency. The second factor identified was northern Ghana's cultural and economic factors. This impediment is evident through bad farming practices, patriarchy which inhibits access to productive resources among women, and the high levels of poverty affecting the ability of locals to adopt more sustainable modes of production. The final category of impediment is associated with the institutional inefficiencies of the government. The inefficiencies are evident in their failure to provide the right infrastructure, prioritize the interest of local producer, especially smallholder farmers who form the majority, and develop market linkages that will go a long way to enhance livelihoods, which will ultimately strengthen the sustainability of the food system in the region.

### **3.6 CONCLUSION**

In order to assess the existing food system in northern Ghana, and to identify the impediments to achieving sustainable food systems in the region, this chapter first outlined the regional development disparities in Ghana and provided reasons to why northern Ghana lags behind southern Ghana. History, unfavorable climate and agricultural production conditions, and post-independence political neglect were cited for the region's deprived state (Al-Hassan & Diao, 2007; ODI & CEPA, 2005). The region's unfavorable climatic and agricultural production conditions mean that households constantly deal with seasonal challenges of accessing food. The recent 2016 assessment of food insecurity in northern Ghana was examined in comparison to food insecurity estimates from 2012 and it was established that there are higher levels of food insecurity in the region now, with the possibility of the situation worsening during the lean season. The situation in region had deteriorated, implying that Ghana's poor economic performance over that period had worsened food insecurity in northern Ghana.

Building on the background analysis of deprivation and food insecurity in northern Ghana, the chapter provided an assessment of the food system in the region. By comparing the food system in northern Ghana to the characteristics of sustainable food systems, it was established that the food system in the region is unsustainable due to its failure to measure up to the characteristics of sustainable food systems. Northern Ghana's deprived state significantly contributes to the unsustainable state of the food system. There is inadequate support to smallholder farmers, poor market infrastructure, while women's access to productive resources are highly constrained by the patriarchal social organization in the region. Local food producers are trapped in low productivity cycles which inhibits self-sufficiency, coupled with poor post-harvest techniques leading to high post-harvest losses and inefficient use of food.

The chapter further analyzed the challenges of food production in the region as well as market-related issues and identified three categories of impediments to sustainable food systems in northern Ghana. The natural/geographical impediment impedes the region's potential to achieve self-sufficiency through efficient local food production while the cultural and economic impediment affects the ability of locals to adopt more sustainable modes of production. The final category of impediment is associated with the institutional inefficiencies of the government. The inefficiencies were evident in the government's failure to prioritize the interest of local producers, provide the right infrastructure, and develop market linkages that could go a long way to enhance livelihoods opportunities.

As established in Chapter Two, there is the tendency to place value on one pillar/dimension of sustainability which could lead to a weakening of the other, and that represents a major challenge in the conceptualization and creation of sustainable food systems (Hinrichs, 2010). In the case of northern Ghana, the high levels of deprivation faced by locals means that they are most likely to place value on the economic dimension ahead of the environment. Local desires to accumulate wealth and improve their standard of living can compromise the need to ensure sustainability of their resource base, presenting a huge challenge for policy makers and various stakeholders interested in achieving food system sustainability in the region.

In a nutshell, this chapter has answered the second research question of the study by assessing the state of the food system in northern Ghana, leading to the identification the impediments to achieving sustainable food system in the region. The chapter has provided background understand of the situation in northern Ghana towards achieving the thesis objective of assessing the efforts made by international development agencies to improve food security in

northern Ghana. The next chapter addresses the third research question of the thesis: How is the World Food Programme's country project designed and operationalized, and how effective is it in addressing the impediments to achieving sustainable food systems in northern Ghana?

## **CHAPTER FOUR: INTERNATIONAL DEVELOPMENT AND SUSTAINABLE FOOD SYSTEMS IN NORTHERN GHANA**

### **4.1 INTRODUCTION**

This chapter addresses the third research question of the thesis: How is the World Food Programme's country project designed and operationalized, and how effective is it in addressing the impediments to achieving sustainable food systems in northern Ghana?

In order to answer this question, various interventions of WFP's operations in Ghana are examined: the three components of the country programme and the Purchase for Progress initiative. The first component assessed is the Support for Primary Education and Girl Child Education and it includes the provision of school meals and take home rations for girls. While improvements in school enrolments were recorded, it is revealed that the expected benefit of the programme creating market linkages for local food producers never materialized. The second component assessed is the Nutritional Support for Vulnerable Groups and it includes the treatment of malnourished people living with HIV as well as malnourished children, pregnant and lactating mothers. During the implementation of this intervention, it was established that delays in clearing and transporting food to beneficiaries as well as storage-related problems deeply affected WFP's efforts to provide nutritional support to vulnerable groups. I argue that the potential benefit of the component providing access to food and enhancing the livelihood opportunities of beneficiaries were hampered by the institutional inefficiencies of both WFP and its partner agencies.

The third component assessed is the Resilience to Climate Shocks and Support for Livelihoods. Under this component, the agency helps food insecure communities to develop assets that will improve their resilience to climatic shocks, while providing livelihood support training to enable beneficiaries to generate income during the off-farming season. It is

established that poor planning and limited budgetary allocation rendered this component unsuccessful as the livelihood support aspect of the component never materialized. The Purchase for Progress pilot initiative is also assessed due to its connections to the three components of WFP's country programme. The initiative is aimed at improving the livelihoods of smallholder farmers by increasing their agricultural productivity, helping them to reduce post-harvest losses, and linking them to quality markets. It is established that supported farmer groups are largely dependent on WFP purchases, as local markets do not grade farm produce nor reward quality. It is also revealed that the failure of the agency to engage more smallholder farmers in northern Ghana who are in greater need of the initiative marred the accomplishment of the initiative and its potential impact on food system sustainability in northern Ghana.

From the assessment of these interventions in northern Ghana, the chapter concludes that inefficiencies in the institutional arrangement between WFP and its partners, including the government, resulted in the interventions failing to address the impediment to sustainable food systems in northern Ghana. The potential of WFP's interventions to accomplish some of the practical goals of sustainable food systems established in Chapter Two were not realized due to the institutional inefficiencies of the agencies involved. Given that food insecurity in northern Ghana barely improved with the implementation of these programmes, it is argued that the development interventions could have achieved greater impact if more time was spent on planning and evaluation.

## **4.2 WFP GHANA COUNTRY PROGRAMME ASSESSMENT**

As established in Chapter Three, the three northern regions are less developed and have the majority of the poorest and most food insecure population in the country (WFP, 2011). The implementation of neo-liberal reforms, which minimized the role of the state, transferred as



many roles as possible to the private sector and promoted export-oriented growth irrespective of the consequences, led to further marginalization of the poor in Ghana, especially those in the northern half of the country, as the north lacks a major export base (Hulme, 2008; Mohan, 2002). This has created a situation in which the three northern regions have received increasing government and donor attention in the form of agricultural subsidies and social programs (Avea et al., 2016). Northern Ghana has been a focal point for international development assistance, mainly of the “service delivery” type (Mohan, 2002) in which bilateral and multilateral aid have been used to support all sorts of livelihood enhancement programmes.

The government of Ghana has adopted policies like decentralization with the hope of closing the development gap in the country, but so far to no avail. The most recent policy initiative is the establishment of the Savannah Accelerated Development Authority (SADA), which has been given the mandate to adopt a growth and sustainable development approach that will help increase incomes among the poor in northern Ghana (SADA, 2016). International development actors like the WFP, UNICEF, USAID, and DANIDA, just to name a few, have their operations in northern Ghana aligned with the SADA mandate of promoting growth and development in the region, through numerous programmes and projects geared towards reducing poverty, vulnerability and food insecurity.

United Nation’s World Food Programme (WFP) has four major types of operations, namely emergency operations (EMOPs) which provides immediate assistance, protracted relief and recovery operations (PRROs) for rebuilding after an emergency, development operations (DEVs) which aim at improving food security for communities, and special operations (SOs) which are used to create the specific infrastructure needed for emergency operations (WFP, ca. 2016). The work of the agency in Ghana is of the Development type and is geared towards

helping vulnerable groups to access resources to help them remain food secure. This section examines the design, implementation and effectiveness of the three (3) components of WFP's country programme and the agency's Purchase for Progress (P4P) initiative towards addressing the impediments of sustainable food systems in northern Ghana (see Section 3.5).

The goal of WFP's country programme is to improve the capacity of communities and the government of Ghana to "ensure sustainable food and nutrition security through: i) support for primary and girls' education; ii) nutrition support for vulnerable groups; and iii) resilience against climatic shocks and support for livelihoods" (WFP, 2011, p. 3). The Purchase for Progress (P4P) initiative is also aimed at ensuring sustainable food security among smallholder farmers by assisting them to improve productivity and to access market. The P4P initiative is assessed due to its ties to the components of the WFP's country programme (see figure 4.1). More specifically, P4P made standardized food products available on local markets for the basic nutrition and food aid components of WFP's country programme as the agency planned to acquire 60% of their food supplies from the local market and that was only achievable through the implementation of the P4P initiative (WFP, 2011).

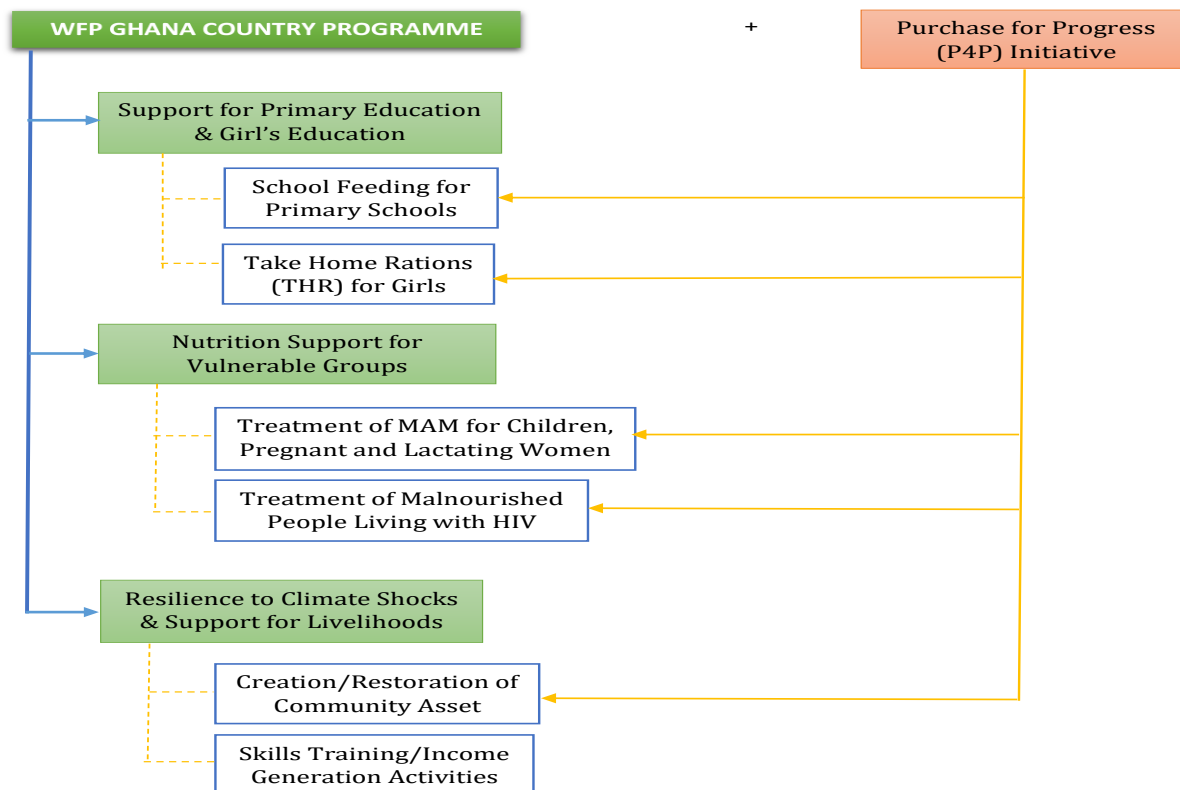


Figure 4.1: WFP Ghana Operations from 2012 to 2016.  
Source: Author's Construct.

The realization that development requires sound policy framework and institutions has resulted in many development agencies shaping their operations and interventions to achieve strategic results at the country level (Piccioto, 2009). Therefore, WFP's interventions are also aligned with various policies and initiatives of the government. Relying on field interviews and data from an evaluation of WFP's country programme (see Gardner et al., 2015), the following sub-sections assesses the contribution of the various components of WFP's country programme and the P4P initiative in addressing the impediments to sustainable food systems in northern Ghana.

#### 4.2.1 Support for Primary Education and Girls' Education (SPEGE)

Ghana's educational sector shows clear signs of regional disparities between the north and south on one hand and between urban and rural areas within regions on the other (Azungah,

2011). Owing to poverty, food insecurity and seasonal migration for employment, a good share of school-age children do not attend school, with significant gender gaps in school attendance and completion rates in northern Ghana (WFP, 2011). At the national level, only 23.5% of the population six years and older have never attended school but the regional percentages for northern Ghana are about twice the national average (Northern- 56.60%, Upper East- 45.80% and Upper West- 48.20%) (GSS, 2013). In terms of gender disparity for the population six years and older who have never attended school, the figures range from as low as 6.2% for males and 12.6% for females in the Greater Accra region, to a high of 50.5% for males and 62.5% for females in northern region (ibid). Figure 4.2 presents the gender distribution of the population six years and older who have never attended school for some selected regions.

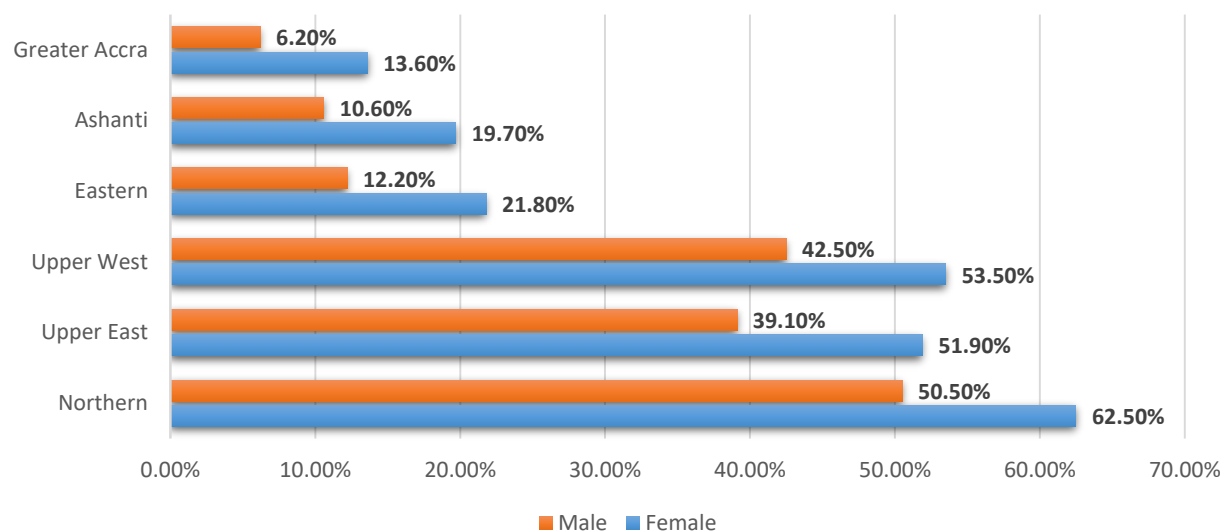


Figure 4.2: Population 6 years and older who have never attended school.  
Source: GSS, 2013.

These statistics and many more on Ghana's educational sector help justify the introduction of government initiatives like the Ghana School Feeding Programme. During periods of economic hardship and shock, households often resort to negative coping strategies, including taking children out of school to save on tuition and school related expenses (Molinas,

& de la Mothe, 2010). School feeding programmes have been a key response to the recent food, fuel and financial crisis, forming part of national educational policies and plans, and providing a social safety net for children living in poverty and food insecurity (Bundy et al., 2009; Drake et al., 2012). The School Feeding Programme is a complex, multi-sectoral intervention with effects cutting across education, health and nutrition, and food production. The Ghana School Feeding Programme (GSFP) started with 10 primary schools in late 2005, but as of 2011, the programme had reached over 1.6 million primary school children in 170 districts of Ghana (Gelli et al., 2016).

As part of WFP's efforts to improve the capacity of communities and state institutions, the agency designed this component of the country programme to increase access to education, improve school attendance and gender parity, reduce micronutrient deficiencies, and improve the capacity of the Ghana School Feeding Programme (GSFP) Secretariat (WFP, 2011). WFP's Support for Primary Education and Girls' Education (SPEGE) provides nutritionally balanced school meals to targeted public primary schools and take home rations (THRs) for girls in Northern, Upper West and Upper East Regions. With the plan to transition the full management of their part of the school feeding programme to the government secretariat by 2016, WFP initially covered 40% of assisted schools while the government covered the remaining 60% (WFP, 2011). The number of schools assisted by WFP gradually reduced from January 2014 (Gardner et al., 2015) and information gathered during field studies revealed that the agency had fully transferred the management of the programme to the government by summer 2016:

We have moved our focus on school feeding to policy, to help develop the capacity of government. It has been the big picture all this while. We are supporting the school feeding programme to draft legislation with a consultant. We are paying for all the expense and the motive behind that is for school feeding to be a thing in existence regardless of which government is in power. We want there to be a legislation, which will make it binding on all governments. Therefore, we are supporting the Ghana school

feeding programme with its development and I think they have finalized the draft bill and it is expected to be sent before parliament soon. So we are well on the way to making sure that there is a legislation on school feeding. Next year [2017], we will not be doing the direct implementation of school feeding because government has that well under control. They are actually scaling up, so now we are looking at our support being through policy. (WFP Rep, July 2016)

The Ghana School Feeding Programme (GSFP) staff training exceeded the target of 100 with over 600 staff trained (Gardner et al., 2015), while also achieving the planned handover of WFP's school feeding mandate to the GSFP secretariat as evident in the interview transcript.

WFP also provided Take Home Rations (THR) in selected districts with the highest household poverty and the lowest Gender Parity Index (GPI) in the country. Gardner et al. (2015) argue that this part of the SPEGE component targeted food insecure districts, where socio-cultural practices continue to restrict girls' enrolment, retention and completion at the basic school level. Girl child education is devalued in Ghana because of the cultural mindset that an educated son will be able to provide for his family, but an educated daughter will become a mother and wife, regardless of her schooling (Lambert, Perrino and Barreras, 2012). Therefore, parents tend to withdraw girls from school in times of economic hardship. As part of WFP's support for their education, junior high school girls with 80% attendance received a monthly THR of 11 kg of cereals, vegetable oil and salt, with a market value of approximately US\$15 (WFP, 2011). Although the schools selected for the THR were not always the most deprived schools, the incentive package (THR) often attracted girls from the rural remote areas to schools in the district capitals (Gardner et al., 2015). Explaining the special focus on girls, the representative of the agency explained the special focus on girls as follows:

In some districts, gender parity is not in favor of the girls. We have a lot more boys in school than girls. So we do assessment to see where this problem occurs in which district. Then we provide incentive packages for girls in those schools in those districts. Eventually, if girls are able to make 75-80% of attendance in school, we give them

incentive packages... What it does is when parents know that at the end of the month or school term, there will be some incentive for the girls, they will not remove them the school. Usually, why do they remove them from the school? To help sell, to help look after children, to work on the farm. But if they know that there will be some kind of support coming, they keep them in school. So it helps girls stay in school longer. We do that for junior high school students. (WFP Rep, July 2016)

Combining school feeding with take home rations for girls is an effective way of eliminating the gender gap in schools, Molinas and de la Mothe (2010) argue, as it draws girls to school, maintain their attendance and increases their advancement from one grade to the other.

By design, this component of WFP's operations could help reduce the cultural and economic impediments to sustainable food systems in northern Ghana established in Chapter Three by assisting households to reduce expenses on food and education, freeing up income for them to invest in their livelihoods. The promotion of girl child education also decreases the marginalization of women/girls, helping to reduce challenges they face as a result of the patriarchal societies they live in. Additionally, the component was expected to provide good market linkages for local producers, as desired for food system sustainability, through the acquisition of local produce for school feeding and take-home rations.

The usefulness of school feeding programmes was clearly manifested in the improvements recorded in school enrolment, attendance and retention of pupils whose education would have been terminated prematurely as a result of socio-economic difficulties (Alhassan & Alhassan, 2014). Across all the WFP assisted schools, there were considerable improvements in school enrolment for both girls and boys. Gardner et al. (2015) maintain that at the kindergarten level, a large number of under-aged children were also enrolled across most of the districts with the school feeding intervention. Having a healthy beginning is important, as Jukes, Drake and Bundy (2007) argue that poor nutrition in early childhood affects cognitive development and learning potential. Despite the high levels of malnutrition among infants in northern Ghana (see

WFP, 2012), Gardner et al. (2015) argue that parents enrolled their under-aged children in order to take advantage of the free meals offered in schools. In that regard, the intervention became an opportunity for locals to reduce their financial burden as anticipated.

Apart from procuring the oil from foreign markets for the take home rations (THR), most of the commodities used for the school meals and provided as part of the rations (brown rice, maize, beans, salt, palm oil, etc.) were of Ghanaian origin, not imported by the agency (Gardner et al., 2015). It was also encouraging to note that the caterers at the schools were procuring almost all of their school meal commodities from local markets within a 5-kilometer radius of the community, and in some cases, at the closest district capital market where they had credit from the vendors to obtain their main commodities (ibid). The local procurement of commodities was a very positive development, as local demand for food and services from school feeding, according to Gelli et al. (2016), has the potential to create a reliable market for smallholder farmers and other stakeholders involved in the school feeding supply chain. Commenting on the procurement of food items by caterers, an academic stated the following in an interview:

It is supposed to be homegrown. Using homegrown food would trickle down to the farmers, giving them additional or increased income. So there is improvement for farmers in terms of income while the nutrition status of the school children is changing... if the concept is right and they are using homegrown food, it also reflects in their production. More money means they are going to produce more... However, here is the case where we have a situation where we do not have money to pay our farmers regularly. Then, people will come in as food contractors. These food contractors will sometimes supply imported food so the concept of using homegrown food is lost. (Academic 1, August 2016)

It is evident from the interview transcript that delays or inefficient payment systems have altered the intention behind the school feeding programme. The programme was designed to make payments to caterers after the meals have been served. However, delays in receiving payments hamper their ability to purchase food in bulk, and to guarantee better and stable food



prices (Gelli et al., 2016). De Carvalho et al. (2011) argue that seasonal price variations between harvest and lean periods (up to 400% price increases) greatly affects the work of caterers. While the direct procurement of food from smallholder farmers could help to mitigate the price volatility challenge faced by caterers, the reality is that most of the food is acquired from markets and these markets are flooded with imported products, especially during the lean season (De Carvalho et al., 2011). The seasonality for local food availability means that the idea of caterers benefiting from lower and more stable prices when dealing directly with local producers is a mirage.

Heavy reliance on the market for food supplies virtually defeats the idea of making the programme beneficial to smallholder farmers, as their produce will be competing with imported produce on the market. The supposed linkage of local farmers to the supply chain of the school feeding programme has been weak or non-existent (Kamaludeen, 2014). On the other hand, food contractors would not hesitate to procure foreign products, as mentioned by the academic, due to their profit motives, therefore the valued support for local industries/producers is lost. Although Gardner et al. (2015) assert that most of the commodities used for the school meals and provided as part of the rations were of Ghanaian origin, it means that the commodities were procured locally, not imported by the agency, but does not erode the fact that some of the commodities were foreign products on the local market. Procurements from the local market are not strictly homegrown due to the challenges of local production in northern Ghana, as established in Chapter Three.

To conclude, there is great value in WFP's support for primary and girl child education, as it provides an effective safety net to poor families in northern Ghana, helping them free up resources for productive investments (Molinas & de la Mothe, 2010). In that regard, this

component is an effective way of improving access to productive resources geared towards ensuring that vulnerable groups have reduced expenses, making it possible for them to invest into their livelihoods and ultimately helping to address the cultural and economic impediments to sustainable food systems in the region. However, the ability of the component to address the impediment to achieving sustainable food systems is hampered by its failure to establish the expected linkages of local farmers to the supply chain of the programme (Kamaludeen, 2014). The failure of WFP's intervention to establish the expected linkages resonates with the institutional inefficiencies of the state identified as impediments to food system sustainability in the region (see Chapter Three).

#### **4.2.2 Nutrition Support for Vulnerable Groups**

WFP's Nutrition Support for Vulnerable Groups includes two main activities. The first involves the treatment of moderate acute malnutrition (MAM) for young children and pregnant and lactating women (Gardner et al., 2015). The agency aimed at reducing chronic malnutrition in children under two and acute malnutrition in children under five (WFP, 2011). Malnutrition is an important risk factor for childhood mortality especially in developing countries like Ghana (Saeed et al., 2015). In order to prevent stunting during gestation, malnourished pregnant women with the highest chronic malnutrition rates received rations of fortified foods during the lean season, from as early in their pregnancies as possible for up to seven months (WFP, 2011). As part of the treatment of acute malnutrition, districts with the highest acute malnutrition levels received supplementary feeding for children aged 6-59 months with moderate acute malnutrition.

The second main activity involved the treatment of malnourished people living with HIV (PLHIV) who are Anti- Retroviral Treatment (ART) clients and food insecure, as well as their household members (Gardner et al., 2015). Food insecurity or poor nutrition among PLHIV can have adverse effects on disease progression and adherence to treatment (see Berhe et al., 2013;

Young et al., 2014). Therefore, malnourished ART clients with BMI below 18.5 and their household members received food assistance for up to six months, and were discharged from the programme when their BMI exceeded 18.5 (WFP, 2011). Once the clients regained their productivity, WFP planned to introduce livelihood support initiatives (training in weaving, baking, embroidery, etc.) to help beneficiaries become self-reliant and prevent the need for them to receive food assistance indefinitely.

By design, this component of WFP's operations could have been effective in addressing the cultural and economic impediments to sustainable food systems in the region by ensuring the rights of vulnerable groups to food as well as correcting some of the institutional inefficiencies in creating livelihood enhancing opportunities in northern Ghana as desired for food system sustainability. However, the success of this intervention was also affected by the impediments to sustainable food systems established in Chapter Three. Late delivery of imported food for the beneficiaries of the component greatly affected the nutrition support provided to vulnerable groups. Gardner et al. (2015) argues that the disruptions in food deliveries affected beneficiary participation, as food was not available continuously at health facilities. In 2014 for instance, the programme reached less than 60% of intended beneficiaries, with only 30% of planned foods distributed. This was mainly due to the inefficiencies of the government to clear and transport imported food, because of the gaps in the funding of the Ministry of Health (MoH) and the Ghana Health Service (GHS). During the last quarter of the same year, the government was unable to clear and transport food to Tamale, a sign of poor institutional capacity. As part of the institutional arrangements between WFP and the government of middle income countries like Ghana, the agency expected the government to contribute to its development operations by covering costs related to port clearance, transportation, storage, distribution and tracking (ibid).

The poor conditions of storage facilities in northern Ghana also contributed to the inefficiency in the treatment of malnourished people living with HIV and malnourished young children, pregnant and lactating women. The poor management of the facilities led to high amounts of food loss due to storage conditions. Gardner et al. (2015) assert that most of the health facilities stored the food with other supplies or stacked them against walls and directly on floors. The lack of regular fumigation resulted in weevil-infestation of stored maize and beans in the Tamale (Northern Region) warehouse, and in a PLHIV food storage site. In 2014, a Ghanaian undercover journalist exposed the theft and black market sale of WFP donated food by Nutrition Officers of the Ghanaian government in the Upper East Region (Anas, 2014). This incident, in addition to the 2015 burning of a government warehouse, resulting in the loss of WFP donated food, valued at US\$435,950, provides evidence of the inefficiencies and weaknesses in the institutional arrangement between WFP and government agencies (Gardner et al., 2015). In that vein, the institutional inefficiencies identified as impediments to food systems sustainability in Chapter Three were also evident in the agency's intervention to support vulnerable groups in northern Ghana.

The treatment and management of malnutrition is highly dependent on effective identification of cases (Saeed et al., 2015). In spite of considerable improvements in the identification of MAM beneficiaries, Gardner et al. (2015) assert that there were difficulties in differentiating between severe and moderate malnutrition among children. Although Mid-Upper Arm Circumference (MUAC) tapes could be a valuable tool for early detection of acute malnutrition in infants at the community level, there is compelling evidence of high measurement errors in some circumstances, compromising the quality of care given (Saeed et al., 2015). Therefore, the fact that 16 clinics that were treating beneficiaries of this component

lacked materials to support proper identification of MAM beneficiaries other than MUAC tapes (Gardner et al., 2015) is worrisome. The writers argue that in some instances, children eligible for severe acute malnutrition (SAM) treatment received treatment for moderate acute malnutrition (MAM). This is an indication of the limited resources and institutional inefficiencies embedded within Ghana's health sector.

Patient treatment, recovery and discharge, with timely food supplies, are vital to achieving higher programme coverage and success. However, Gardner et al. (2015) observed that even when the discharge criteria had been met, MAM treatment for beneficiaries continued in a number of facilities "due to misinformation among staff, lack of supportive programme materials and inadequate supervision and mentoring" (p. 24). Economic difficulties faced by component beneficiaries and the absence of the intended livelihood support initiatives aimed at making beneficiaries self-reliant made it difficult to discharge patients after achieving treatment objectives.

WFP's recent assessment of food insecurity in northern Ghana revealed that two out of the three most prevalent shocks which affected the ability of households to access food were a household member being temporarily ill (15%) and a household member being chronically ill (11.1%) (WFP, 2016a). In other words, illness to household members, especially the breadwinners, limits household income, making them vulnerable to periods of food insecurity. In that regard, although WFP's nutritional support for vulnerable groups seems to be a noble initiative, especially ensuring the rights of vulnerable groups to food, the agency's failure to implement livelihood support initiatives that will ensure self-reliance and sufficiency among beneficiaries is disappointing. The intervention fell short of addressing the impediment to food system sustainability in northern Ghana due to the reliance of the agency on imported food

commodities which could have been procured from local producers and the food storage challenges leading to inefficient use of procured food.

#### **4.2.3 Resilience to Climate Shocks and Support for Livelihoods**

The resilience to climate shocks and support for livelihoods component of WFP's country programme targeted increasing "physical and economic resilience to extreme weather events through targeted reconstruction/rehabilitation interventions, diversification of livelihood opportunities and reduction of poverty among communities in the three northern regions" (WFP, 2011, p. 12). By focusing on food insecure rural communities in northern Ghana, this component involved "(i) the creation or restoration of risk reduction/disaster mitigation community assets, and (ii) skills training/income generating activities (IGA)" (Gardner et al., 2015, p. 5). By design, this component could have been effective in addressing the natural impediments and institutional inefficiencies that render the food system in northern Ghana unsustainable. This is because WFP hoped to engage food insecure communities in the creation or restoration of community assets while rewarding participants with food/income during off-farming seasons. The planned interventions include de-silting of small dams for dry-season irrigation, water harvesting, flood mitigation works, tree planting, and seed multiplication for community reforestation (WFP, 2011). Explaining the motivation for having this component in the agency's country programme, the WFP representative stated:

The third component is on asset creation. We link it to climate change; we link it to food security; we link it to poverty reduction. So essentially, rehabilitating community assets that support food production and mitigate climate change adaptation. So if there are community dams, if there are dugouts, if there are roads that link a farming community to a bigger market, or if there is the need to undertake afforestation, these are some of the activities we undertake as asset creation for farmers during the off-farming season. This is because during the farming season, everybody wants to farm. But when it is the off-farming season, we engaged the farmers to do rehabilitation works and they get a stipend. They get some money for doing the work, for labour. So essentially, it is a labour

intensive package work. They get some money for participating at the end of the day, and the community's asset is rehabilitated... So it can be anything that the community identifies as being necessary for them to improve their food security, those are the things that we usually engage ourselves in and we collaborate with the Ministry of Food and Agriculture, Environmental Protection Agency, among others. These are the key stakeholders we engage in doing these activities. (WFP Rep, July, 2016)

As evident from the interview transcript, a participatory approach, managed by village development committees, was used to identify the activities that were carried out (WFP, 2011). The agency used an area-based development approach in a maximum of ten communities in the districts most vulnerable to climatic shocks.<sup>5</sup> By targeting food-insecure groups, including female-headed households, and others vulnerable to climate shocks, WFP hoped to train locals in activities such as baking, weaving, dyeing, and embroidery in order to increase their livelihood options during the off-farming season (ibid). This component could have helped to improve efficiency in local food production and enhance livelihood security as desired for a sustainable food system in northern Ghana. However, Gardner et al. (2015) argue that inadequate design of the skills training activities and lack of complementary resources from partners to translate the acquired skills into income generating activities, resulted in the skills training aspect being placed on hold. The non-implementation of the skills training activities was partly because only a small amount of money was allocated in the budget to cover the costs of the complementary resources, hence WFP's partners were reluctant to get involved (ibid).

While WFP's criteria for selecting beneficiaries stipulated that the component was targeting food insecure households, the locally based Community Project Implementation Committees (CPIC) selected participants based on their physical ability and motivation. Gardner et al. (2015) argued that the committees were not aware that participants should come from food

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<sup>5</sup> Districts most vulnerable to climatic shocks include Central Gonja, East Gonja, Kpandai and West Mamprusi in Northern Region; Lawra, Wa East and Wa West in Upper West Region; and Talensi-Nabdam, Bawku West and Builsa in Upper East Region

insecure households and be one person per household in order to have a fair participation and representation of every food insecure household in each community. Similarly, during community reforestation projects, the selection of beneficiaries for the tree planting exercise was poorly done as landless households who are at higher risk for food insecurity were excluded.

Gardner et al. (2015) argue that the lack of formal registration often led to actual participation exceeding the cut-off number during the early stages of implementation when the food items were provided as reward for participation. However, the later introduction of cash transfer involved a much stricter registration and validation process, but was also not devoid of problems. For example, there were instances where people worked without being registered, hence received no payment for the work done (ibid). These issues about beneficiary selection are a telling sign of WFP's poor planning of the component. Unfortunately, on many occasions, participants did not receive food in a regular and timely manner, significantly affecting their level of motivation and the progress of the work undertaken (Gardner et al., 2015). Delays in delivery to regional warehouses by the government, and delayed distributions by partners, greatly affected the performance of the component. There were also delays in cash payments, sometimes affecting the timing of work completion.

The assets developed under this component focused on only two types of community assets: the rehabilitation of small dams for domestic use and afforestation activities. In that regard, the agency failed to help food insecure communities to develop assets that will address the cultural and economic impediments to food system sustainability. The developed assets were unable to improve food production and income generation. The most tangible outcome of the component was the reduction of domestic water shortage risks in targeted communities, and water availability for livestock rearing (Gardner et al., 2015). Measuring the impacts of



afforestation activities on risk reduction is difficult as project sites were too scattered across the regions to mitigate climate change effects. While forest ecosystems can be carbon sinks and are therefore integrated in international climate change policy (Reyer, Guericke & Ibisch, 2009), implementing the afforestation project in close proximity stood a better chance at mitigating the effects of climate change in the region than the scattered nature of WFP's afforestation project carried out on the land of individuals (Gardner et al., 2015).

By covering more districts and communities than was initially planned, Gardner et al. (2015) argue that the wide geographical coverage reduced the impact and efficiency of the component in terms of meeting its objective. Poor planning and timing of implemented activities was another factor, as in some cases the community work coincided with land preparation for the new planting season, therefore affecting the level of participation among beneficiaries. The project partners struggled to mobilize participants and to provide working resources on time, due to the tight working schedule and delays in the payments (ibid).

To conclude, since most communities in northern Ghana are vulnerable to climatic shocks as established in Chapter Three, this component of WFP's country programme could have made a significant difference in the lives of the beneficiaries by ensuring access to food during the lean season as well as helping develop assets that have been lacking due to the institutional inefficiencies of the state. Improving productivity of farmers in such communities is highly dependent on their ability to access irrigation that will ensure production throughout the year. However, most of the dams were developed for domestic purposes instead of farm irrigation. This does not erode the importance of the reduced risk to water shortages for domestic purposes, but developing irrigation dams would have been a good step towards addressing the natural/geographic impediments to achieving sustainable food systems in the region. In terms of

the afforestation project that was carried out, the neglect of landless households in the selection process reduces the possibility of such groups, most likely to be food insecure, from having a share of the potential long-term economic benefit of the exercise (through the sale of timber or for charcoal production). Again, the WFP's failure to implement the livelihood support aspect of the component limited the component's effectiveness in addressing the cultural and economic impediments to achieving sustainable food systems as established in Chapter Three.

#### **4.2.4 Purchase for Progress (P4P) Initiative**

World Food Programme (WFP) introduced the Purchase for Progress initiative (P4P) as a pilot programme in 20 countries worldwide. Besides Ghana, other African nations including Kenya, Liberia, Malawi, Burkina Faso, Democratic Republic of the Congo, and Ethiopia, benefited from the initiative (Percy et al., 2014). Given that agricultural activities in Ghana are mostly rain-fed, and are characterized by low productivity and limited access to markets, smallholder farmers are one of the most food insecure groups in Ghana, especially in the northern half of the country (WFP, 2012). Having identified the potential of small-scale farming activities as a key driver for socioeconomic development, many development agencies, donors and governments are explicitly focusing on linking smallholder farmers to markets (Percy et al., 2014). Therefore, WFP's P4P initiative aimed to improve the livelihoods of smallholder farmers by increasing their agricultural productivity, helping them to reduce post-harvest losses, improving market infrastructure and linking them to quality markets (WFP, 2015c).

By design, this initiative could have been an effective way of addressing the failings of state institutions to provide smallholder farmers in northern Ghana with the right training and infrastructure that will propel their growth and development towards food system sustainability. In other words, the initiative was an important move towards prioritizing the needs of smallholder farmers and local markets, ensuring efficiency in local food production and food

use, as well as enhancing livelihood opportunities with effective value chains, all desired for food system sustainability in northern Ghana. Explaining WFP's motives for implementing the programme, the representative stated:

P4P is meant to support smallholder farmers, helps them to improve their production practices, and when they are producing better, we make them available to the market... Secondary schools buy food for feeding so we make them available to other producers, processors, those who process maize into other products. So we make them available to the market after we have helped them to improve the quality of their produce. (WFP Rep, July 2016)

Implementing the P4P initiative called for WFP's collaboration with both governmental and non-governmental organizations, including the Adventist Development & Relief Agency (ADRA), ACIDI/VOCA Agriculture Development and Value Chain Enhancement project (ADVANCE), Crop Research Institute (CRI), Ghana Grains Council (GGC), Ministry of Food and Agriculture (MoFA), UN Women, Japan International Cooperation Agency (JICA), among others (WFP, 2015c). WFP and their partners trained 26 farming based organizations (FBOs), with total membership of 1,524 farmers, on a variety of skills along the value chain (including production; post-harvest handling; marketing and quality control) to improve the quality and quantity of their products (ibid). The initiative targeted three food security crops: maize, rice, and beans/cowpea. The lack of product standardization in Ghana's agricultural sector negatively affects the market for locally produced crops on both local and international markets (MoFA, 2007), and development agencies such as WFP have had to resort to importing food supplies, which could have been acquired locally, for their relief programmes in the country. Therefore, the training provided under the initiative was a major boost towards improving the livelihoods of smallholder farmers in the country, enabling them to compete with imported products (WFP, 2015c). Explaining WFP's goal for implementing the initiative in Ghana, a representative of a partner agency stated the following:

WFP wanted to support the local industry instead of always importing food for distribution for relief work. By supporting the local industry, they also help improve the standard and the quality of locally produced grain, which was a good thing. So this was coming from a policy WFP had instituted. Prior to that, people often complained that we are here in Ghana and WFP imports maize from Argentina, South Africa, US, & Mexico, for the school feeding programme and relief to Niger and these other countries. Why can't WFP buy maize from Ghana and create income for the farmer. WFP said if only you can produce maize to the quality and the grade that we want, because maize in Ghana is ungraded. No standards prior to the initiative. (NGO Rep 4, August 2016)

Additionally, producing standardized products locally also takes away WFP's burden of importing food for their relief programmes and the government's burden of clearing imported foods from the port. The agency's representative explained:

Ghana is a lower middle-income country so by virtue of that alone, there are certain things we cannot have in our budget. Because the country we are operating in is a lower middle-income country, the government should be able to do them by themselves. It comes with certain challenges because Ghana may be a lower middle-income country but may not often be financially able to undertake some of the responsibilities or functions under the agreements that we sign with them. And it makes implementing food assistance or bringing food into the country and distributing very difficult because we have to import the food, transport from Malaysia, Belgium, South Africa, wherever. Then, when it comes, as part of being a middle-income country, government has the responsibility to clear them from the port as well as transport them to our project areas, which are all over the three northern regions. So it comes with heavy financial responsibility and it has been a bit of a challenge over the couple of years. So instead of importing say super cereal, we support local food producers to produce it. What we do is we support them to grow the food and support them with the standards. We check that they are able to meet the standards in terms of safety, in terms of quality that we need... So WFP importing food is typically out because it comes with many issues. (WFP Rep, July 2016)

It is evident from the interview transcript that the initiative was also necessitated by the challenges faced by the government in honoring their part of the agreement in terms of clearing and transporting imported goods to project sites effectively. So the P4P initiative enabled farmers to improve the quantity and quality of their crops, with the agency providing a market by

procuring the production surplus through direct contracts and soft tenders, mainly for its school feeding programme. As of May 2015, the beneficiaries of the initiative had sold US\$ 1.8 million worth of commodities (4100 metric tons) to the agency (WFP, 2015c). Besides the agency acquiring the produce for the various components of the country programme, there were opportunities to sell to private processing companies, and to export surplus products to countries in need. For instance, P4P-supported FBOs in the Ashanti region sold 50 metric tons of white maize, worth US\$ 15,000, to Premium Foods Limited, one of the biggest private processing companies in Ghana (ibid).

In addition to the training farmers received, the initiative provided tools to help farmers improve the quality and quantity of their crops on a cost-sharing basis (WFP, 2015c). A representative of a partner agency for the initiative explained his agency's role in P4P:

It was our responsibility to facilitate WFP's goals of buying quality food commodities from local farmers. How do we facilitate that? We wrote a proposal and took the best of the previous farmer groups that we have worked with; farmer groups that are pro-active, business oriented those who are hungry for money... WFP was interested in picking farmers with reasonably high productivity who produce beyond their consumption levels and who have a surplus to turn over to WFP. So we trained the farmers again, we set up demonstration plots for both maize and cowpea, organized farmer field schools around each site... They saw the differences; they compared the yield from the experimental plot to what they were getting from their farms... We went through the importance of drying the maize, reducing aflatoxins, which are fungus that grows in them, and then making sure that it is not infested with weevils and foreign matter. So each farmer is supplied with a tapoleen [drying mat] and the farmer paid 30% of the cost of the tapoleen, WFP gave them a grant of 70%. Then each farmer group received a moisture meter for measuring the moisture content of the maize... WFP agreed to buy them in 50-kilo bags so the agency provided the sacs, which were embossed with WFP. The farmer had no problems with buying storage sacs. (NGO Rep 4, August 2016)

It is disappointing to note that the selected beneficiaries of the initiative were mostly well-performing smallholder producers who had benefited from previous development aid projects. It was expected that the P4P initiative would empower poor performing food insecure

farmers, but as stated by the partner representative, WFP was interested in farmers with reasonably high productivity, producing beyond their consumption levels. This defeats P4P's objective of improving the livelihood of poor smallholder farmers by increasing their agricultural productivity (WFP, 2015c). In other words, the initiative did not improve the productivity of poor performing smallholder farmers, but rather provided a market for the highly productive ones. Explaining the characteristics of the FBOs that were involved in the P4P initiative, the representative of a partner agency stated:

The farmers had already come out of another project where they had gone through similar training and so these are farmers with a changed mindset because that previous programme did not train them technically but also took them through business planning development, marketing, even going to do a market survey before you decide to sell your maize or your produce. So these are farmers who had already being trained and had a different mindset, farmers who were business oriented, who wanted to make money. (NGO Rep 4, August 2016)

This suggests that the initiative ignored less-educated, under-performing farmers with consumption exceeding production who are most likely to be food insecure. A great chunk of P4P's success occurred in the cultivation of maize, mostly at the Ejura Sekyere Dumasi district in the Ashanti region, which had 16 of the 26 FBOs (Gardner et al., 2015). Considering the agro-ecological conditions in the Ashanti region, it makes sense that FBOs in the area performed better than their northern counterparts. Given that northern Ghana has the most food insecure households, an intervention like P4P is of greater need and use to smallholder farmers in the region if WFP was committed to helping improve lives by training farmers to achieve greater yields through improved methods of farming. In that regard, the success achieved under the initiative would have been more impressive if a greater share of the participating FBOs were from northern Ghana. Unfortunately, having more FBOs in the Ashanti region means that the agency took the easy route to ensuring the success of the initiative.

It is, however, encouraging to note that 48% of the participants were female farmers (WFP, 2015c). Having such a significant proportion of female participants bodes well in terms of improving the livelihood of households, since almost 50% of smallholder farmers in Africa are female (Agrawal, 2014). Contrary to beliefs about large-scale commercial farming activities, Tscharntke et al. (2012) assert that smallholder farmers are rather the backbone of achieving food security in developing countries like Ghana. Commenting on the strengths of the initiative, a representative of a partner agency noted:

The strength was the ready market and the quality assurance. Because WFP was looking at quality maize, they provided resources for training to ensure the quality of the maize. They did not compromise on Aflatoxin levels. So before they buy, the quality has to be good and of course, once the quality is good, you have the market for your produce... So long as farmers can get good market for their produce, that was their motivation. (NGO Rep 3, August 2016)

Despite the strength of the P4P initiative mentioned in the interview quotation, there were lapses in the success of the initiative. The rice and cowpea supported FBOs were less successful compared to the maize producing ones. While the maize producing FBOs managed to produce beyond WFP's purchase volume and to deliver on time, Gardner et al. (2015) argue that the locally produced rice and cowpea were too expensive to compete with imported parity price hence very limited volumes were purchased under the initiative. This suggests that the high cost of locally producing rice and cowpea hampered the success of that part of the initiative. In other words, the price volatility of locally produced rice and cowpea in Ghana made it economically wise to acquire imported produce for WFP's programmes. Commenting on the weakness of the initiative and the challenges faced by farmers, representatives of partner agencies stated:

The weakness that came out was that the farmers over produced the maize and WFP was not able to buy everything. WFP gave them quotas. So if they give you 10 tons and you produce 20 tons, you will have to find market for the excess. For me, that was the

limitation. They had to fall back on us [partner agency]. We had to find other commercial buyers. (NGO Rep 3, August 2016)

Now, producing quality grain is a well-understood thing among the farmers. Once the farmers know that this is grade one, top quality grain, they will not sell it below x or y price. This means that selling these top quality grains on the local market is not possible because there are no standards on the local market... Because of that, the farmers who are producing graded commodities can only sell to agro-processors and large-scale companies. Their problem after P4P is finding market for their produce. (NGO Rep 4, August 2016)

These arguments made by the representatives resonate with the assertion that supported FBOs were largely dependent on “WFP purchases since local markets do not grade grains nor reward quality” (Gardner et al., 2015, p. 33). Therefore, the sustainability of the progress made under the initiative heavily relies on the capacity of the FBOs to pursue collective sales and linkages to large, reliable, and quality markets. Similar to what was established in Chapter Three, challenges in the creation of effective market linkages have negatively impacted the accomplishment of the P4P initiative.

To conclude, the P4P initiative was quite successful in terms of production outputs and the introduction of graded grains into the Ghanaian food production industry, giving local producers the opportunity to compete with products on the international market, which is in line with the practical ways of achieving sustainable food systems identified in Chapter Two. As established in Chapter Three, poor farming techniques, post-harvest losses, and access to market constantly inhibit the ability of small-holder farmers in northern Ghana to become food secure, therefore what was offered under the P4P initiative stood a good chance of correcting the institutional failings that have rendered the food system unsustainable in northern Ghana. However, the initiative falls short of commendation due to the concentration of participating FBOs in the Ashanti. In other words, the initiative would have been more effective in addressing the impediments to achieving sustainable food systems if a larger share of the FBOs were from



the northern half of the country. The market challenges of the FBO's after the initiative reify the importance of the local market and the need to create sustainable market linkages that will improve the sustainability of the food system.

#### **4.3 SUMMATIVE ASSESSMENT OF WFP GHANA COUNTRY PROGRAMME**

In a bid to assess the ability of WFP's country programme in addressing the impediments to achieving sustainable food systems in northern Ghana, this chapter has assessed the three components of the WFP's country programme in Ghana as well as the agency's P4P pilot initiative. These projects were assessed because they exemplify the types of international development assistance (short-term relief and long-term development aid) to developing countries like Ghana. The interventions of WFP in northern Ghana were geared towards achieving strategic results; however, they are not devoid of problems.

WFP's Support for Primary and Girl Child Education was an effective way of improving access to productive resources geared towards ensuring that vulnerable groups have reduced expenses, making it possible for them to invest into their livelihoods and ultimately helping to address the cultural and economic impediments to sustainable food systems in the region. It was expected that local producers will benefit from the establishment of market linkages with the programme. However, the component's ability to resolve the cultural and economic impediments to sustainable food systems in northern Ghana was derailed by institutional inefficiencies to provide the right environment for the potential gains to be realized. Kamaludeen (2014) argues that the expected linkages of local farmers to the supply chain of the programme have been non-existent, so caterers tend to rely on the market for food supplies. Instead of food supplies being homegrown, high levels of price volatility in Ghana led to the procurement of imported goods, working against the efficiency of caterers in providing the school meals.

The Nutritional Support to Vulnerable Groups component of WFP's programme was an important step towards ensuring the rights of beneficiaries to food. However, delays in clearing and transporting food to beneficiaries as well as storage-related problems deeply affected WFP's efforts to provide nutritional support to vulnerable groups (Gardner et al., 2015). Poor management of the storage facilities in the Northern region contributed to the high rates of food loss. In other words, there was less efficiency in food use, and the proposed introduction of livelihood support initiatives to help beneficiaries become self-reliant and prevent the need for indefinite food assistance never materialized. This resulted in the continued dependency and treatment of individuals who were fit to be discharged from the programme. The implementation of this component was also inefficient due to weak tracking systems that would ensure effective storage and greater accountability of foods acquired for beneficiaries. Again, the potential of this component to improve the sustainability of the food system in northern Ghana by reducing the cultural and economic impediments (access to food and livelihood opportunities during the lean season) was hampered by the institutional inefficiencies of both WFP and its partner agencies. Ensuring greater accountability is crucial in light of the theft incident in 2014, and the loss of donated food through the outbreak of fire at the government warehouse in 2015 (see Anas, 2014; Gardner et al., 2015).

As a result of institutional inefficiencies, similar issues relating to delays in the delivery of food or cash payments affected the efficiency of the Resilience to Climate Shocks and Support for Livelihoods component of WFP's country programme. This component had the potential of addressing both natural/geographical and the cultural/economic impediments to food system sustainability in northern Ghana. The skills training / income generation aspect of the component never materialized while only two types of community assets, which are not directly linked with

climate resilience, food production and income generation, were developed under the component. The skills training aspect was placed on hold due to inadequate design of activities, low budgetary allocation, and the lack of complementary resources needed from partner agencies (Gardner et al., 2015). There were also inefficiencies in the selection criteria, resulting in the non-involvement of vulnerable groups who are in more need of the interventions. This was seen in the exclusion of landless households who are at higher risk for food insecurity from the tree planting initiative.

The Purchase for Progress (P4P) initiative was aimed at increasing the agricultural productivity of smallholder farmers, helping them to reduce post-harvest losses, improving market infrastructure, linking them to quality markets, and ultimately, improving their lives and livelihoods (WFP, 2015c). The initiative was fairly successful as WFP and their partners trained FBOs on a variety of skills along the value chain to improve the quality and quantity of their productions. P4P was very useful in introducing graded crop produce in Ghana. The lack of quality grains on the local market meant relief agencies like WFP were importing most of their food supplies, therefore P4P was the right step towards remedying the constant importation of supplies for relief programmes. Besides the initiative being commendable for its marketing strengths during the implementation period, it was disappointing to note that the initiative failed to empower poor performing and likely to be food insecure smallholder farmers in northern Ghana. For reasons best known to WFP, the majority of the beneficiaries were highly productive, business oriented farmers from the Ashanti region. Priority was not given to farmers in northern Ghana who are in greater need of the P4P initiative. In addition, the promoted growth of rice and cowpea was less successful compared to the maize production. Locally produced rice and cowpea were too expensive to compete with imported parity price, hence very limited volumes

were purchased under the initiative (Gardner et al., 2015). Since local markets do not grade grains nor reward quality, the FBOs heavily relied on the WFP to purchase their grains. In that vein, the sustainability of the progress made under the initiative greatly hinges on the ability of the farmers to establish reliable and quality-oriented markets (WFP, 2015c).

WFP's support for primary and girl child education and the resilience to climatic shocks and Support for Livelihoods component of the country programme, together with the nutritional support for vulnerable groups and the P4P initiative, were expected to alleviate short-term hunger, while working towards improving the lives and livelihoods of the most impoverished people in northern Ghana. However, results of the agency's recent "*Emergency Food Security and Market Assessment in Ghana*" (EFSMA) showed an increase in the prevalence of food insecurity between 2012 and the time of the assessment (February 2016) as established in Chapter Three (WFP, 2016a).

The potential of WFP's interventions to (a) give priority to local markets while regulating international trade; (b) enhance livelihood opportunities with effective value-chains; (c) give priority to smallholder farmers, especially women; (d) help achieve self-sufficiency through efficient local production; and (e) treat food as a human rights issue, all desired for sustainable food systems, were not realized due to the institutional inefficiencies of the agencies and its partners (both government and private organizations). Undeniably, weak state institutions affected the performance of WFP's programmes, but WFP must be criticized for their shabby planning and limited budgetary allocations to some aspects of their work as seen with the lack of livelihood support initiatives for the Nutritional Support for Vulnerable Groups component and that of the Resilience to Climate Shocks and Livelihood Support. The absence of a livelihood support component made it difficult to discharge successfully treated MAM patients.

Furthermore, the limited number of staff to cover project sites, which span across the entire northern half of Ghana, also affected the performance of WFP's country programme. Gardner et al. (2015) argue that field-level monitoring of the components by WFP staff was constrained and was mainly used to inform WFP corporate reporting and information sharing systems, rather than being used as a tool for the agency to track progress, identify gaps and make modifications.

With the hope of helping Ghana reach zero hunger, which is in line with Sustainable Development Goal II (see United Nations, 2015), WFP has re-designed its programmes with the introduction of “*Enhanced Nutrition and Value Chain*” (ENVAC) programme, announced in June 2016 (WFP, 2016b). ENVAC is aimed at improving the nutritional status of 1400 pregnant and nursing women, and 35,000 children, as well as boosting the income of smallholder farmers in the Ashanti, Brong-Ahafo, Northern, Upper East and Upper West Regions. Falling in line with the characteristic of sustainable food systems (enhancing livelihood opportunities through effective value-chains) (see Chapter Two), the emphasis on value-chain enhancement, Mitchell et al. (2009) maintain, can contribute to poverty reduction through the creation of livelihood opportunities along the chain. However, as established in Chapter Three, developing value chains may be ineffective in reducing poverty if careful conceptualization and assessment is not carried out (Stoian et al., 2012).

By implementing ENVAC over the next five years, the agency plans to promote sustainable agricultural production of good quality staple crops among smallholder farmers, supplied to industrial and community-level food processors to be processed into fortified nutritious foods, and will encourage the wider population to consume these locally produced foods in order to prevent malnutrition (WFP, 2016b). However, taking insights from the country programme assessed in this chapter, it is worth reiterating the need for the agency to carefully

plan and implement the programme within their carrying capacity in order to ensure greater performance and impact. The ideas are noble, but the US\$15 million contribution from the Canadian government (see WFP, 2016b), in addition to the funds from other donors, must be carefully spent on life-changing interventions that will improve lives and ensure food system sustainability. Lessons and experiences gained through the implementation of WFP's programmes assessed in this thesis must be considered under the ENVAC programme.

In conclusion, the development assistance of World Food Programme in northern Ghana was ineffective in addressing the impediments to achieving sustainable food systems in northern Ghana due to the institutional inefficiencies of the agency and its partners. The discrepancies in the design and implementation of the interventions resonates with the challenges of creating sustainable food systems identified in Chapter Two. Such challenges are evident in the setting of geographical boundaries of the interventions (scattered nature of operations in the region) and the priorities that were given to some aspects of the interventions over others (for example, low regard for the livelihood support initiatives). These challenges highlight the need for continuous learning, evaluation and research, geared towards finding more sustainable ways of doing things in order to achieve the desired result.

## **CHAPTER FIVE: CONCLUSION**

### **5.1 INTRODUCTION**

This chapter answers the fourth research question of the thesis: What lessons can be learned from the evaluation of the WFP's country projects to design future international development interventions that would effectively nurture sustainable food systems in Ghana?

In order to answer this question, the key findings of the first three research questions of the thesis are summarized. The concept of sustainable food systems is discussed followed by an assessment of the impediments to achieving sustainable food systems in northern Ghana. A summary of the key finding from the evaluation of WFP's operations in northern Ghana is provided before the final concluding remarks for the thesis. Taking insights from the lessons learned in the assessment of food systems in northern Ghana and the evaluation of WFP's country programme towards achieving sustainable food systems in Ghana, the chapter ends with recommendations to international development agencies, the government/state institutions, and academics. The recommendations include the need to improve institutional efficiency and coordination, empower marginalized groups, especially women, to access their rights, and re-focus development through the local governance system. It is also recommended that the government and its development partners prioritize agricultural irrigation, environmental sustainability and improve food storage to curtail price volatility. For researchers and academics, Ghana is in need of more research into agricultural policies geared towards nurturing sustainable food systems in northern Ghana and the country as a whole.

### **5.2 SUMMARY AND CONCLUSION**

Food security has received a lot of attention in recent years from both policy makers and academics, and this increase in attention was particularly noticeable after the 2007-2008 and

2010 world food crises which occurred despite the production of enough food to feed the entire population of the world (Candel, 2014; FAO, 2015a; Lang and Barling, 2012). The lessons learned from the crisis led to a shift of focus from the conventional notion of food security, focusing on raising food production to the notion of food systems, seen to be more socially and ecologically sensitive, stressing the need to address a complex array of problems along the food chain (Lang & Barling, 2012). Food security, Tacoli et al. (2013) maintain, is the outcome of effective food systems. Achieving food security has been on the development agenda for decades, evident in the persistent actions of international development agencies. However, these agencies have achieved only limited success, leading political ecologists and critical development scholars to conclude that development interventions may be doing more to hinder than help achieve food security.

Despite several decades of attention from both state and donor-led development agencies, northern Ghana remains underdeveloped, with the continued prevalence of extreme poverty and food insecurity (Kuwornu et al., 2013, WFP, 2015b). Agriculture is the dominant livelihood among households in northern Ghana, but food production is a key challenge in the area due to an erratic weather pattern, low soil fertility and limited access to production inputs. The limited availability of livelihood opportunities means that most households are constantly dealing with seasonal challenges of accessing food, with seasonal migration established as a one of the coping strategies. In that regard, developing sustainable food systems can provide a better opportunity for international development agencies and state institutions to address the complex array of problems that continue to hinder the realization of food security in northern Ghana. Therefore, the objective of this thesis was to assess the attempts of international development agencies to improve food security in northern Ghana. This assessment was carried out using the notion of



‘sustainable food systems’, an emerging perspective which is argued to be more socially and ecologically sensitive. The following sub-sections provide a summary of the key findings to the first three research questions.

### **5.2.1 Sustainable food systems**

The current industrialized and increasingly globalized food system which is huge, environmentally degrading, unhealthy, wasteful, placeless, disempowering, and unjust has been a worry for all (Hinrichs, 2010; Kloppenburg et al., 2000). This commodified food system is flawed due to concerns about the sustainability of current practices in the agri-food system, unequal access to means of livelihood, and worries about health and safety of modern foods and dietary practices (Koc, 2010), which affect the quality of life of many people globally, and raise concerns about achieving food security. Evidence of food insecurity -- especially in light of the 2007/08 food crisis -- suggests that food systems are under stress, hence the call for sustainability of food systems. Sustainability should be the basis on which food is produced and consumed to ensure a healthy living for all (Sustainable Development Commission, 2009).

However, the characteristics of sustainable food systems identified by various scholars seemed to be comprehensive, vague and all-encompassing, therefore the need to establish more practical ways of creating sustainable food systems. Highlighting the need to examine the legacies and interplay of different sustainability discourses to deepen knowledge on sustainable food systems, Hinrichs (2010) argues that paying attention to the shifting tides of sustainability discourse can inform and potentially strengthen the theory and practice on food systems. In that light, the discourse of ‘sustainable development’, ‘sustainable agriculture’, ‘sustainable livelihood’, and ‘sustainable transitions’, in addition to the concepts of ‘food sovereignty’ and ‘value chain approach’ were used to identify practical ways of achieving sustainable food

security due to their usefulness and efficacy in deepening the knowledge and understanding of food system sustainability. The practical ways of creating sustainable food systems, suggested within the context of a mostly agrarian, developing nation like Ghana, include: (a) treating ‘food’ as a human rights issue, (b) giving priority to local markets and regulating international trade, (c) enhancing livelihood opportunities/strategies with effective value-chains, (d) high efficiency in food use, (e) continuous learning and research geared toward sustainable transition, (f) ensuring ecologically sustainable agricultural practices, (g) giving priority to smallholder farmers, especially women, and (h) achieving self-sufficiency through efficient local food production.

It was also established that the emergent nature of knowledge, the issues sustainability trade-offs, and the importance of power and politics presents challenges in contextualizing sustainable food systems. By adopting the systems approach, challenges emerge from setting the boundaries of the system and the kind of blinders that are considered or successfully removed. The fact that it is very difficult to agree on what result matters most for sustainable food systems and the absence of good data measuring tools of sustainability is a major challenge. Therefore, Hinrichs (2010) maintains that sustainable food systems are unlikely to be achieved from one blue ribbon recipe which is followed to the latter, but instead, multiple recipes need to be located, tested, adapted and shared. Having a sustainable food system requires continuous reflection and tinkering of methods or measures.

### **5.2.2 Impediments to achieving sustainable food systems in northern Ghana**

Considering the development disparities in Ghana, it was established that northern Ghana lags behind the south in terms of development. Reasons given for the underdevelopment of northern Ghana include history, unfavorable climate and agricultural production conditions, and post-independence political neglect (Al-Hassan & Diao, 2007; ODI & CEPA, 2005). There is

widespread poverty and limited economic opportunities in northern Ghana. The unfavorable climate and food production conditions meant that households constantly deal with seasonal challenges of accessing food, encouraging widespread migration to the southern parts of the country in an attempt to overcome difficulties in meeting their food needs. Due to the seasonal challenges of accessing food, the region has the most food insecure population in the country.

The 2016 assessment of food insecurity in northern Ghana was compared to food insecurity estimates from 2012, and it was established that there are higher levels of food insecurity in the region now, with the possibility of the situation worsening during the lean season, although the reliability of the figures is questionable. The estimates revealed an increase in food insecurity from 9% in 2012 to 14% in 2016 for the Northern Region, and a corresponding increase from 16% to 18% in the Upper West Region, while the Upper East Region remained the most food insecure region although the proportion of food insecure households decreased from 28% to 20.7% (WFP, 2012; 2016a). The higher rates of food insecurity in the three northern regions suggests that the situation had become chronic over the years (between 2012 and 2016), correlating with Ghana's poor economic performance over the same period. It was established that due to challenges in food production in the region as well as market-related issues, locals continue to struggle with increasing their productivity, competing on both local and foreign markets, and accessing food from the local market during the off-farming season.

Comparing the food system in northern Ghana to the characteristics of sustainable food systems, it was concluded that northern Ghana's food system is unsustainable, failing to measure up to the characteristics of sustainable food systems. Northern Ghana's deprived state significantly contributes to the unsustainable state of the food system in the region. There are inefficiencies in local food production, as local food producers are trapped in low productivity

cycles (Agrawal, 2014) and less efficiency in food use, mostly due to poor post-harvest techniques (Bruce, 2016). Giving priority to local markets while regulating international trade has been unattainable because local markets in northern Ghana have poor market infrastructure with weak integration between local, districts, regional markets. There is little regard for ecologically sustainable agricultural practices in northern Ghana due to the lack of knowledge and greater emphasis on increasing local production. Also, it was established that the food system in northern Ghana is unsustainable because of its poor contribution to livelihood security, as opportunities and incomes from non-farm sources, especially during the lean season, are very poor. Cultural factors, particularly the patrilineal societies of the north, makes the food system unable to ensure the rights of marginalized groups (especially women) to food and productive resources.

By analyzing the challenges of food production in northern Ghana as well as market-related issues, three categories of impediments to achieving sustainable food systems were identified. The first category of impediment was the natural/geographical factors which are closely tied to the unfavorable climatic conditions in the region. The natural impediment negatively affects local food production and the region's ability to achieve self-sufficiency. The second factor identified was northern Ghana's cultural and economic factors. This impediment was evident through bad farming practices, patriarchy inhibiting access to productive resources and the high levels of poverty affecting the ability of locals to adopt more sustainable modes of production. The final category of impediment was associated with the institutional inefficiencies of the state agencies. The inefficiencies were evident in the failure of state institutions to provide the right infrastructure, prioritize the interests of local producer, especially smallholder farmers,

and develop market linkages that would enhance livelihoods which will ultimately strengthen the sustainability of the food system in the region.

### **5.2.3 International development and sustainable food systems in northern Ghana**

The continued prevalence of poverty and food insecurity in northern Ghana has made the region a focal point for both domestic and international development assistance. In an attempt to assess the contribution of international development towards addressing the impediments to sustainable food systems, this study examined the operations of WFP in northern Ghana. The three components of WFP's country programme and the Purchase for Progress (P4P) initiative were examined.

The first component assessed was the Support for Primary Education and Girl Child Education and it included the provision of school meals and take home rations for girls. This component had the potential of eliminating the cultural and economic impediments to sustainable food systems by helping households to reduce expenses on food and education which in turn makes income available for them to invest in their livelihoods. More importantly, the component was expected to provide good market linkages for local producers through the acquisition of produce for school feeding and take-home rations. In other words, this component had the potential to improve local food production through increased investment while effective market linkages are developed for local producers as desired for food system sustainability. While improvements in school enrolments for both genders were recorded, it was realized that the expected benefit of the programme creating market linkages for local food producers never materialized.

The second component assessed was the Nutritional Support for Vulnerable Groups and it included the treatment of malnourished people living with HIV as well as malnourished

children, pregnant and lactating mothers. It was established that illness to household members, especially breadwinners, limited household income and made such households vulnerable to periods of food insecurity. However, delays in clearing and transporting food to beneficiaries as well as storage-related problems deeply affected WFP's efforts to provide nutritional support to vulnerable groups. The potential benefit of the component ensuring the right to food and enhancing the livelihood opportunities of beneficiaries as desired for food system sustainability were hampered by the institutional inefficiencies of both WFP and its partner agencies. The livelihood support training aspects of the intervention that would help them to generate income to ensuring self-reliance after treatment were not implemented.

The third intervention assessed was the Resilience to Climate Shocks and Support for Livelihoods. Due to the vulnerability of local people to climatic shocks and the limited livelihood opportunities available in northern Ghana, WFP designed this component to help food insecure communities to develop assets that will improve their resilience to climatic shocks, while providing livelihood support training to enable beneficiaries generate income during the off-farming season. This component could have helped to improve efficiency in local food production and enhance livelihood security as desired for a sustainable food system in northern Ghana. However, it was established that poor planning and limited budgetary allocation rendered component unsuccessful and ineffective in addressing the impediments to food systems sustainability as the livelihood support aspect of the component never materialized. In other words, this component failed to ensure that beneficiaries have livelihoods options that will help them to generate income, especially during the lean season.

The Purchase for Progress pilot initiative was aimed at improving the livelihoods of smallholder farmers by increasing their agricultural productivity, helping them to reduce post-

harvest losses, and linking them to quality markets. The initiative was an important drive towards ensuring efficiency in local food production and food use, prioritizing the needs of smallholder farmers and local markets as well as enhancing livelihood opportunities with effective value chains, all desired for food system sustainability in northern Ghana. It was established that supported farmer groups were largely dependent on WFP purchases, as local markets do not grade farm produce nor reward quality. It was also established that the rice and cowpea supported farmer groups were less successful compared to the maize producing ones. In addition, the failure of the agency to engage more smallholder farmers in northern Ghana who were in greater need of the initiative marred the accomplishment of the initiative and its impact on food system sustainability in northern Ghana. The initiative relied heavily on highly productive, business oriented farmers from the Ashanti region instead of less productive and vulnerable farmer groups in northern Ghana.

In conclusion, this assessment of World Food Programme's development assistance in northern Ghana reveals the fact that international development operations remain ineffective in addressing the impediments to achieving sustainable food systems in northern Ghana, mostly due to institutional inefficiencies. It is astonishing to note that the institutional inefficiencies of the government that have contributed to northern Ghana's underdeveloped state are also evident in the operations of WFP, an international development agency of high repute. In this regard, there is very little to differentiate the achievement of WFP from what the government has achieved over the years, and this brings back the debate of whether international development agencies are in any ways better at executing international development projects than the governments of aid receiving countries. Over the years, aid donors have preferred working with international development agencies/NGOs as they are seen to be superior to the public sector when it comes to

reaching and providing social services to the poor (Barry-Shaw & Jay, 2012). It is ironic to note that the shift to NGO's dominating the international development sector was due to the negative perception of bureaucracy, inefficiency and corruption associated with the governments of developing countries. However, evidence from this study has shown that they are may not be superior to the governments of developing countries in terms of delivering social services to the poor.

The discrepancies in the design and implementation of WFP's development interventions foreground the fact that it is very difficult to agree on what result mattered most when creating sustainable food systems, as there is no ironclad formula. Setting the boundaries of the system, the kind of blinders that are considered or successfully removed, the emergent nature of knowledge, the issue of sustainability trade-offs, and the importance of power and politics, all present challenges in contextualizing sustainable food systems. Sustainability is a process, not an endpoint, and can be achieved through continuous evaluation, learning and research, geared towards finding more sustainable ways of doing things in order to achieve desired results. By assessing the efforts made by international development agencies to improve food security in northern Ghana, this study has also justified the need to work towards achieving sustainable food systems, as the concept provides a clear vision and pathway for governments, development agencies and academics to rethink, challenge and change the existing food systems, which has failed and continues to fail many.

### **5.3 RECOMMENDATIONS**

By making recommendations to international development agencies, the government of Ghana and academics, this section outlines the lessons learned from the evaluation of the food



system in northern Ghana and WFP's country projects through the lens of sustainable food systems.

*1. Improve institutional efficiency and coordination.*

Ghana's food and agricultural sector is a very wide one involving farmers and several governmental and non-governmental agencies. However, due to ineffective institutional coordination, the performance of programmes and projects has been below expectation (MoFA, 2010). As established in this study, the failure of WFP's operations in northern Ghana to address the impediments to sustainable food systems has been attributed to the institutional inefficiencies of the agency and its partners. Institutional difficulties in clearing and transporting imported food from the port and storage-related issues, coupled with the failure to implement the livelihood support aspect of the interventions greatly affected the performance of WFP's programmes towards addressing the impediments to sustainable food system. Therefore, improving the efficiency of both public and private institutions in Ghana is of grave importance. The government needs to strengthen the capacities of state agencies in Ghana. Budgetary limitations and delays in the release of funds to state agencies affect the effectiveness of their operations therefore the government needs to show more commitment to the development agenda of the country, especially towards the northern half of the country by ensuring the timely release of funds and working to build to capacity of state agencies that will improve efficiency. In order to ensure constructive contribution to the realization of sustainable food systems in northern Ghana, there is the need to develop a formal platform for engagement of private sector and civil society (MoFA, 2010). Development partners should work to complement each other through improved coordination and harmonization of operations. Having coordinated operations reduces resource wastage and can provide the needed direction towards poverty alleviation and sustainable food systems in the country. Identifying the carrying capacity of agencies is very important to

improving efficiency of operations. Every agency has its carrying capacity, hence international development agencies need to work towards identifying their carrying capacity, which will inform the size and boundaries that are set for projects in order to achieve the desired results.

## *2. Prioritize agricultural irrigation*

It has been established in this study that farmers in northern Ghana are vulnerable to crop production deficits due to the heavy reliance on rain-fed agriculture (MoFA, 2007). Over-reliance on rain-fed agriculture is a contributing factor to the food production challenges in the region and in the country as a whole. Estimates suggest that only 0.4% of the 7,847,300 hectares of land under cultivation in Ghana are under irrigation (MoFA, 2013), hence improving irrigation could go a long way to guarantee increased productivity. To Wood (2013), irrigation farming is more needed in northern Ghana than southern Ghana because the region enjoys only one rainy season and as established in the study, the presence of water bodies in the region makes irrigation adoption possible. Irrigation facilities can be development along the Volta river which traverses the entire northern half of the country. Additionally, since the Volta basin covers 70.1% of Ghana's total land area, groundwater can be exploited as a viable option in terms of accessing fresh water for agricultural purposes for the covered regions (Anayah & Kaluarachchi, 2009; Berry et al., 2006). Groundwater extraction is successful when a region lies within a river basin, therefore adopting groundwater irrigation is possible in northern Ghana. All that is needed is capital and the political will of the government to construct irrigation facilities for smallholder farmers who are in greater need of such facilities. International development agencies should move beyond their conventional capacity building activities, providing irrigation facilities that will help project beneficiaries work beyond the raining seasons. WFP's component on Resilience to Climate Shocks and Livelihood Support tried to address the irrigation issues in the region but

lost its focus on improving agricultural productivity to the reduction of domestic water shortage risks in targeted communities (Gardner et al., 2015). Researchers and academics can contribute to the development of irrigation facilities in northern Ghana by identifying location specific-points and methods that will yield the best result for communities without compromising the natural resource base. Adopting irrigation in northern Ghana and the country as a whole will be a huge step towards ensuring efficiency in local production and achieving self-sufficiency.

### *3. Empower marginalized groups, especially women, to access their rights*

A lot of the poor and marginalized are unaware of their right to food and productive resources. According to Agarwal (2014), smallholder farmers face substantial constraints, including insecure rights to arable land, limited access to inputs such as seeds and fertilizers, limited access to irrigation facilities, limited access to information on new agricultural practices and marketing infrastructure, etc. In northern Ghana, the patrilineal system of inheritance limits women's access to productive resources such as land, capital and inputs. The existing land tenure and production relations is entrenched with unequal power relations that have been drawn along gender lines where men have primary rights of inheritance of land and property while women have user rights mediated through their relationship to men (Sarpong, 2006). The hierarchical nature of rights and responsibilities over land and other property are skewed against women in favor of men due to the gender-differentiated rights and roles which are deeply enshrined in local customs. This implies that existing customs define access to land as "a privilege rather than a right" (Awanyo, 2009, p. 145). Due to the fact that land ownership in Ghana is mainly customary, accounting for about 80% of all underdeveloped lands in the country (Kuusaana and Eledi, 2015), the government wields limited power in terms of ensuring the allocation of land and other productive resources to women and marginalized groups through legislation. Land is communally owned and allocated by customary guardians -- chiefs, earth priests, clan heads and

family heads -- who hold the allodial interest in land in trust for the people (Campion and Acheampong, 2014). To Yaro (2004), the social, economic and cultural development of marginalized groups in northern Ghana is impossible without empowerment. This is to say that empowerment should be considered as an effective means to addressing the traditional mindset and practice of men's superiority and sense of entitlement over women when it comes to securing access to land and other productive resources in northern Ghana. The government and its development partners should make gender mainstreaming a priority. The government should set up a national policy to protect the rights of women/marginalized groups to secure access to arable land, irrigation facilities, inputs like seeds, information on new agricultural practices, etc. While development agencies like ActionAid have been working on gender mainstreaming in northern Ghana by helping women secure access to arable land and other productive resources, other development agencies should come on board to prioritize empowering marginalized groups in the country.

#### *4. Prioritize environmental sustainability*

Ghana's agricultural sector is natural resource-based, as seen in the heavy reliance on rain-fed agriculture. Evidence of climate change and biodiversity loss highlight the need to make environmental sustainability a national objective. Traditional agricultural practices such as bush burning, and the improper use of agro-chemicals, threaten the sustainability of the resource base. Therefore, environmental sustainability should be a precondition for achieving improved productivity, incomes, and livelihoods for both present and future generations, especially in an agrarian economy like that of northern Ghana and the country as a whole (MoFA, 2010). Given the high levels of deprivation and heavy reliance on agriculture in northern Ghana, the desires of farmers to improve local production and livelihood can lead to a compromise on ensuring

sustainability of the productive resource base. Such tensions serve as a huge challenge to achieving sustainable food systems. Therefore, the government should develop a national agricultural land use policy that will ensure sustainable land management (MoFA, 2007). Developing a national policy is important since unsustainable agricultural practices can be a disservice to the ecosystem. Extension services to farmers should be redesigned to prioritize environmentally sound practices. Researchers and development agencies should work towards the adoption of ecologically sound farming systems that will ensure resource regeneration and be non-exploitative of the environment. Adopting eco-efficient and environmentally friendly management can greatly improve productivity and promote the resilience of the ecosystem (Tscharntke et al., 2012).

#### 5. *Paying attention to Import Parity Price (IPP)*

While it is important to prioritize local markets and regulate the negative impact of international trade, this study has shown that the ability of local farmers to compete with imported produce on the market is greatly affected by import parity price. As established during the assessment of WFP's operations, the failure of the rice and cowpea production under the P4P initiative was due to the high cost of producing the commodities locally compared to what was available on the international market. Therefore, the government and its development partners need to pay attention to the parity price of food security crops in Ghana and should work on reducing the cost of production for smallholder farmers. Developers of projects like the P4P initiative should consider import parity price at the initial stages of project design and implementation in order to find viable ways to offset the negative effects of parity price on the success of the project. A viable way of reducing the cost of local production is through subsidized production inputs, just like what the government offers to cocoa farmers in the country. By extending help to local farmers who produce staple crops in northern Ghana, poor

farmers can overcome the economic difficulties faced during the farming season and are given the incentive to produce since they will be able to compete with foreign imports on the market. This will be a huge step towards regulating the negative effects of international trade while protecting and promoting the interest of local producers/markets. Careful research will be required in the determination of how best local production cost can be reduced.

#### *6. Improve food storage to curtail price volatility*

As established in the assessment of WFP's operations, the concept of using homegrown food commodities under the school feeding programme was lost due to seasonal price variations hence caterers tend to rely on food contractors. The seasonal price increases of up to 400% between harvest and lean periods (De Carvalho et al., 2011) needs to be examined and curtailed by the government and its development partners. This study has shown the importance of storage to ensuring the efficient use of food and the sustainability of the food system as a whole. Providing storage facilities offers a viable option towards putting an end to the seasonal food insecurity (food secure for six months and food insecure for the remaining six months of the year) in northern Ghana. Providing community and district storage facilities can help stabilize food prices and protect the local market. The establishment of the National Buffer Stock Food Company was a great move by the government (see Baafi, 2016), but the ideas behind its operation (mopping up excess produce from all farmers in order to reduce post-harvest losses or food spoilage) needs to be modified/strengthened in order for the company to provide the desired protection for local producers, ensuring price stability and access to food for all on the domestic market.

#### *7. Re-focus development through efficient local governance system*

In Ghana, the Local Governance Act 1993 (Act 462) identifies Metropolitan, Municipal and District Assemblies as key players of development in their respective local areas. The

assemblies are entrusted with the political, administrative and fiscal powers to plan and execute development projects in their respective districts (Der Bebelleh & Nobabumah, 2013). Although the creation of the District Assemblies Common Fund (DACF) and payment of the fund is a constitutional requirement, there have been several instances where payments into the fund have been delayed for more than one year, resulting in the failure to disburse funds to the Metropolitan, Municipal and District Assemblies (MMDAs) (King et al., 2003). Such delays have rendered the assemblies ineffective in their operations. Initiated projects, which are supposed to be completed within a year, actually spanned a period of four years or more due to such delays. Having a well-functioning local government systems stands a better chance to effect the needed development at the local level, easily impacting the lives of the local people to a greater degree. The need to reduce bureaucracy at the central governance level, implement development plans to specific needs of local communities, and to ensure greater participation and public accountability, are the reasons behind the adoption of decentralized forms of governance (Der Bebelleh & Nobabumah, 2013). In that regard, decentralization has the power to improve or worsen regional development disparities depending on how carefully it is designed and implemented (Azungah, 2011). The government needs to show more commitment to ensuring the effectiveness of local governance in the country, and this can be done through the provision of both financial, and human resources. The recently-established Savannah Accelerated Development Authority (SADA), mandated with closing the development gap between northern and southern Ghana by accelerating development in the north, is a step back to centralized forms of development and governance. Local government bodies are very important stakeholders when it comes to rural development (Der Bebelleh & Nobabumah, 2013), therefore, having efficient and effective ones nullifies the need for independent bodies like SADA. International

development agencies need to recognize the importance of working with district assemblies since these assemblies are the best means of gaining detailed field accounts and experiences that can ensure effective design and implementation of location-specific projects that will help close the development gap in the country.

#### *8. Fight corruption*

The government of Ghana also needs to show more commitment to fighting corruption in the country, especially within state institutions. The theft and black market sale of WFP donated food by Nutrition Officers in the Upper East Region (see Anas, 2014), as well as the corruption scandals of SADA, evident in the authority's inability to account for 19 million Ghana cedis (US\$ 4,313,419.33) earmarked for the purchase of tractors for agricultural activities in the SADA regions in 2013 (see Gadugah, 2014), provide enough evidence that corruption continues to be a huge problem that impedes the development of the nation. A report from the 2015 People and Corruption African survey conducted between March 2014 and September 2015 ranked Ghana as the second most corrupt African nation (GhanaWeb, 2015). Given that the recent growth of the NGO development sector is partly based on the assumption that state agencies are corrupt (see Barry-Shaw & Jay, 2012; Mohan, 2002), fighting corruption through greater accountability should become a policy objective for the government and its development partners.

#### *9. More research on sustainable food systems*

There is the need for continuous learning and research given the emergent nature of knowledge and the fact that sustainability is a process. Since agriculture is an important sector for the nation's economic growth, it is recommended that future studies should focus on researching into agricultural policies, the application of biotechnology and its benefits, and development of effective value chains and market analysis, which will help improve the lives



and livelihoods of food insecure households, all geared towards nurturing sustainable food systems in the country. The lack of livelihood security in northern Ghana was a contributing factor to the uninspiring performance of WFP's programmes in northern Ghana and has been a contributing factor for the region's underdeveloped state. Therefore, researchers and policy makers should work on developing measures and policies that can improve livelihood security in the region. The development of value chains with effective market linkages presents a viable option for improving livelihood security but as this study has shown, their development requires careful analysis and assessment in order to ensure their usefulness. The government and its development partners should provide funding to help academics and researchers discover and develop policies that will promote the sustainability of the food system in the country.

To conclude, it is worth acknowledging that this study was not able to fully conduct an evaluation that commensurate with its theoretical framework (largely overlooked structural critique), because of the methodology/data generated, geographical focus and the time limitations. By relying on documents and interviews with professionals working with development agencies, the data obtained for the study limited the ability to evaluate the structural impediments to sustainable food systems in northern Ghana. The failure to consider other equally important groups of stakeholders such as local residents/beneficiaries of projects as well as government agencies was because of the limited timeframe for the completion of the study. Also, the boundaries set for the assessment (the entire northern half of the country) was too large, hence affected the study's potential of identifying the structural impediments of sustainable food systems in the region. Narrowing the focus of the study to a smaller geographical area (i.e. specific food insecure districts) can be an effective step toward resolving the deficiency of this study. Also, including all stakeholders of the food system (government, local people,

development partners) in the data generation process will be vital towards developing a rigorous critique that will commensurate with the theoretical framework of the study.

In spite of the deficiency noted above, this study has contributed to scholarly literature on sustainable food systems, providing a clearer understanding of the debate and concept of sustainable food systems and food security, with the identification of the eight practical goals towards achieving sustainable food systems in agrarian developing countries like Ghana. This study has also contributed to scholarly understanding of the food systems in northern Ghana in relation to the notion of sustainable food systems, by establishing the fact that the food system in the region is unsustainable hence the continued prevalence of food insecurity. By assessing WFP's interventions in northern Ghana, several contributions to development policy and practice towards nurturing sustainable food systems in northern Ghana have been identified, with the key ones highlighted in the recommendations. It is worth stating that these recommendations, in addition to the practical ways of achieving sustainable food systems identified in this thesis, may not be an exhaustive list to be followed by development actors. However, giving some consideration to them will be a great step towards improving the situation in the northern Ghana and the country in entirety.

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